Prenatal Preparation of Parents for Neonatal Care: A comparative descriptive study

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Declaration

The study presented within this thesis was undertaken by myself under the guidance of Dr Rosemary Mander, with additional guidance from Dr Kenneth Aitken and Dr Hamish McLeod.

I certify that I have composed the thesis myself and it contains no material published or written by any other person except where due reference has been made in the text.

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Abstract

Objectives: To determine

1) the extent to which parents' prenatal preparation for neonatal unit (NNU) care meets their perceived needs;
2) if there are differences between parents 'prepared' in different ways and between 'prepared' and 'unprepared' parents in their level of anxiety, their initial contact with their baby and support by NNU staff;
3) how NNU staff perceive the support required and given by them to parents 'unprepared' and 'prepared' in different ways, for NNU care.

Design: A descriptive, comparative design.

Sample: A convenience sample of 64 mothers and 25 fathers whose 73 babies were admitted to a NNU participated. A sub-sample of five mothers self-selected. A convenience sample of 83 staff who cared for the babies of participating parents was recruited. A sub-sample of 13 self-selected.

Data Collection and Analysis: All parents consented to complete the State Trait Anxiety Inventory (Spielberger et al 1983) and a researcher designed questionnaire, as well as retrieval of data from their baby's records and informal conversation with the researcher. The sub-sample consented to an in-depth, taped, semi-structured interview. All NNU staff consented to complete a researcher designed questionnaire. The sub-sample consented to focus group participation. Quantitative data were summarized and subjected to t-tests, chi-square tests and Pearson's test for correlation. Qualitative data were transcribed and, using constant comparison, major categories and sub-categories were identified.

Findings: Most parents felt preparation for NNU care as irrelevant unless in a high-risk pregnancy. Most parents were 'unprepared' for NNU care, but 19 (30%) mothers and 7 (28%) fathers had previous experience of NNU, and 18 (28%)

mothers and 9 (36%) fathers had prenatal information about NNU, mainly from doctors and midwives. The majority of parents had low trait and moderate state anxiety. The mean state anxiety scores were independent of whether the parents were 'prepared' or 'unprepared', and the type of preparation. Most parents were no more anxious than usual when their baby was admitted to NNU. Qualitatively, parents given prenatal information found coping easier, and parents with previous experience felt their anxiety moderated. Most parents who had held their baby prior to participation had significant lower mean state anxiety scores than those who had not held their baby. Qualitatively, most parents were disappointed if they were unable to hold their baby and if initial contact was delayed. Some parents with previous experience participated in their baby's care more quickly than parents without experience, but most parents helped care for their baby within 48 hours of admission. All parents felt equally well supported by NNU staff. Staff indicated that similar levels of support were given to all parents, as they were usually unaware of their preparedness.

Conclusions, Implications for Practice and Further Research:

Quantitatively, the relationship, if any, between prenatal information and/or previous experience and differences between trait and state anxiety remains unclear. Qualitatively, 'prepared' parents report reduction or modification of their state anxiety. Relevant prenatal information and media need to be determined and tested. The reliability and validity of the STAI need to be re-evaluated with parents of babies in NNU. NNU staff are usually unaware of parents' preparedness, offer similar support to all parents, and need a method of identifying parents' preparedness. Methods of helping parents of babies in NNU to use their anxiety positively need to be refined and evaluated for effectiveness.

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Abbreviations and definitions

Abbreviations

%	percentage
χ^2	Chi-square test
t	t-test statistic
r	Pearson's correlation statistic
<	Less than
GAS	General Adaptation Syndrome (Selye 1950)
LBW	A baby of low birth weight (Sweet 1988)
NNU	Neonatal unit
NNU staff	Refers to staff who are registered with the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC) and who work in NNUs.
p	Page – used when citing a quotation
p =	Probability value equals
SNS	Sympathetic nervous system
UKCC	United Kingdom Central Council for Nursing, Midwifery and Health Visiting
VLBW	Very low birth weight (Sweet 1988)

Definitions

Emic	From the perspective of the participants (Holloway and Wheeler 1996)
Etic	From the perspective of the researcher (Holloway and Wheeler 1996)
Extremely low birth weight baby	A baby whose birth weight is less than 1000 grams (Sweet 1988)
Fetus	The developing human from the ninth week after conception until birth (Sweet 1988)
Gestation	Pregnancy/weeks of pregnancy (Sweet 1988)
Intranatal	Around the time of the baby's birth (Sweet 1988)
Less anxious	The state anxiety level is more than 10 points lower than the trait score
Low birth weight baby	A baby whose birth weight is less than 2500 grams (Sweet 1988)
Medical staff	Refers to consultant neonatologists, neonatal registrars and senior house officers who work in NNUs
Midwife	Someone with a midwifery qualification registered with the United Kingdom Central Council
More anxious	The state anxiety level is more than 10 points higher then the trait anxiety level
Negative stressor	Refers to something that can provoke a negative stress response (Bond 1986)
Neonatal nurse	Someone with a nursing and/or midwifery qualification registered with the United Kingdom Central Council who is employed in a neonatal unit

Definitions continued

Neonatal unit	A hospital ward area that provides care for babies who require level 1 intensive care, level 2 intensive care or special care (see also Appendix 1)
Neonate	A baby in his first 28 days of life, although is also a term used to describe a baby throughout his stay in a neonatal unit (Sweet 1988)
Neonatologist	A paediatrician who specialises in the care of the neonate (Roberton 1983)
No more anxious than usual	The state anxiety level is within 10 points of the trait anxiety level, i.e. 10 points or less, above or below the trait score
Not of low birth weight	A baby whose birth weight is 2500 grams or more (Sweet 1988)
Nurse	Someone with a nursing qualification registered with the United Kingdom Central Council
Parous	Refers to women who have had more than one baby (Sweet 1988)
Positive stressor	Refers to something that can provoke a positive stress response (Bond 1986)
Postnatal	After the baby's birth (Sweet 1988)
Post-term baby	A baby born after 42 completed weeks gestation (Sweet 1988)
Premature baby	Originally used to refer to a baby whose birth weight was less than 2500 grams (Sweet 1988)
Prenatal	Before the baby's birth (Sweet 1988)

Definitions continued

Prenatal preparation for NNU care	An awareness prior to the baby's birth of NNU care by having • information about NNU and/or • a prenatal visit to NNU and/or • previous experience of a baby in NNU
Prepared	Refers to a parent who has prenatal preparation for NNU care
Preparedness	Refers to the extent to which the parent is prepared (Caplan et al 1965)
Preterm baby	A baby born before 37 completed weeks gestation (Sweet 1988)
Primigravida	A woman who is pregnant for the first time. The plural is primigravidae (Sweet 1988)
'Researcher'	Refers to the author of this thesis
State Trait Anxiety Inventory	A self-completion questionnaire for the objective measurement of state and trait anxiety levels (Spielberger et al 1983)
State anxiety	An individual's level of anxiety at the point in time it is measured by the state inventory of the STAI (Spielberger et al 1983)
Stressor	Refers to something that can provoke a stress response (Selye 1950)
'Study'	Refers to the study reported in this thesis
Term baby	A baby born between 38 weeks and 42 completed weeks gestation (Sweet 1988)

Definitions continued

Trait anxiety	An individual's usual level of anxiety as measured by the trait inventory of the STAI (Spielberger et al 1983)
Unprepared	Refers to parents who have no prenatal preparation for NNU care
Very low birth weight baby	A baby whose birth weight is less than 1500 grams (Sweet 1988)

Introduction

Chapter 1

Introduction

This chapter provides an introduction to the thesis and the 'study'. There are six sections in the chapter with the first three focusing on general background information, parents, and preparation for neonatal unit care. The fourth section outlines the justification for the study, and in the fifth there are lists of the objectives and the questions for the 'study'. To orientate the reader, the final section contains an overview of all the chapters contained within the thesis.

1.1 Background

1.1.1 Historical perspective

"Preterm infants ... have always been cared for differently than full-term babies"

(Sammons and Lewis 1985 p4)

Specific reference to the specialised care of preterm babies is scarce until, in the late nineteenth century, the French obstetrician, Stephane Tarnier, developed an incubator in which to care for preterm babies. This event marked the beginning of the vital complementary role of technology in the nursing and medical care of these babies.

Pierre Budin, a colleague of Tarnier, opened a specialised unit in Paris for the care of sick and preterm babies, using the incubator to maintain thermal stability. Budin and another colleague, Martin Couney, also used the incubators to exhibit preterm babies in several countries and at a permanent exhibition in New York. While such practices are now acknowledged as degrading to the baby, the development of specific care for sick and preterm babies in more conventional health care settings was greatly influenced by this early advertising technique (Wyly 1995a).

In the 1920s, nurseries specialising in the care of sick and preterm babies were opened in the United States of America (USA), but it was not until the 1930s that similar nurseries were developed in the United Kingdom (UK). Initially, an incomplete understanding of the diseases that affected these babies, and a lack of

specifically designed equipment severely restricted the extent of the care that could be provided, resulting in a high mortality rate. However, since the 1960s, the huge expansion of medical and nursing knowledge and the introduction of sophisticated technological innovations have enabled neonatology and neonatal nursing to develop rapidly. The provision of services for sick and preterm babies is now a complex, expensive and expanding sector, with the aim of the intact survival of babies discharged home to adaptive families (Wyly 1995a).

1.1.2 Organisation of neonatal care

The organisation of care of neonates in the Scotland takes account of UK Government recommendations (House of Commons 1980, 1985), and as in the other countries of the UK, only some of the recommendations in reports from independent bodies. These reports include ones from the British Association of Perinatal Medicine (BAPM) (1996), BAPM and Neonatal Nurses Association (NNA) (1992), British Paediatric Association and Royal College of Obstetricians and Gynaecologists (BPA and RCOG) (1983), and the National Medical Consultative Committee (NMCC) (1980 and 1990).

Three levels of care are delivered in neonatal units in Scotland; intensive care level 1, intensive care level 2 and special care (BAPM and NNA 1992) (see Appendix 1). All 25 neonatal units in Scotland provide special care, while intensive care is provided in 17 of the units (Report of the working group reviewing neonatal services in Scotland 1997). In four cities in Scotland, large neonatal units act as regional referral centres offering medical intensive care for both in-born and out-born babies, and in three of these cities, there are regional referral centres offering surgical intensive care.

There are various titles given to the units which provide the different levels of care; special care units, special care baby units, transitional care units, neonatal intensive care units, intensive care baby units (Walker 1982, Roberton 1983). The term neonatal unit (NNU) will be used in this thesis to include all types of units. In this

thesis, the word baby and the male gender will be used to refer to all babies who require care in a NNU.

1.1.3 NNU staffing

Registered Midwives form the largest proportion of staff in NNUs in Scotland, with Registered Sick Children's Nurses or more recently Registered Nurses (Child Health) usually completing the establishment. In some NNUs, nursery nurses and Registered General Nurses are also employed. Neonatal nurse, NNU staff and the female gender will be used within this thesis to include all staff who are registered with the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC) and who work in NNUs.

To offer skilled nursing care to sick and preterm babies, it is acknowledged that NNU staff must be experienced and 'qualified in the specialty' (QIS) (BPA and RCOG 1983, BAPM 1996). Basic QIS education for NNU staff is available in Scotland, and other areas of the UK. There are also neonatal educational programmes at degree and honours degree level to enable neonatal nurses to function as Specialist Practitioners (UKCC 1993). Experienced neonatal nurses can continue their education and qualify as Advanced Neonatal Nurse Practitioners by undertaking programmes which were available in England when the 'study' was being planned (Redshaw and Harris 1995).

NNUs that offer intensive care are recommended to have 24 hour dedicated consultant neonatologist, neonatal registrar and senior house officer cover (BAPM 1996). Medical staff and the male gender will be used in this thesis to refer to all grades of doctors who work in NNUs.

Redshaw et al (1996) revealed that there were no NNUs that met the recommendations either for number or skill level of staff in the UK. Inadequate staffing and/or poor skill mix are likely to negatively affect the babies' care, the

support parents are offered in NNU, and staff morale (Redshaw et al 1996, Lothian Maternity Survey 1993).

1.1.4 NNU environment

The environment of NNUs varies considerably across the UK (Redshaw et al 1996). Those providing intensive care are considered highly technical with numerous machines and monitors emitting noisy alarms and bright lights shining day and night (Morris 1994, Wyly 1995a). This environment is vastly different from the intrauterine environment and it is now considered that these differences may have adverse effects on the development of the preterm baby in particular (Wyly 1995a). While research is limited, Young (1996), following a review of the literature, recommended that a more developmentally sensitive environment be provided for preterm and sick babies, with subdued, day/night cycled lighting, reduced noise levels, avoidance of painful stimuli/adequate analgesia, supportive positioning and individualized interventions.

1.2 Parents

1.2.1 Historical perspective

In order to exhibit and care for preterm babies, Budin and Couney removed them from their parents. This physical separation of parents from their preterm or sick baby continued when NNUs evolved, ostensibly to reduce the risk of infection. In her historical review, Wyly (1995a) suggested that parents were allowed to visit NNUs and be actively involved with their baby's care in the NNU from the end of the 1970s. The impetus for this change is considered to be the work of Klaus and Kennell (1976), who highlighted the potentially negative effects of separation of the mother and baby. Gradually there has been acceptance of the rights of parents and families in relation to their baby and realization that NNU staff members need to become partners with parents and families in the baby's care (Morris 1994).

1.2.2 Parental feelings and support

The birth of a preterm or sick baby who requires NNU care is considered to be a crisis in the lives of the parents, with anxiety the predominant feeling experienced (McHaffie 1987 and 1990, Affonso et al 1992). McHaffie (1987 and 1990) also concluded that mothers of very low birth weight (VLBW) babies experienced emotions of extreme fear, grief and guilt during the initial period of hospitalisation. These findings were supported by those of Affonso et al (1992), who additionally found that mothers had been unprepared for their labour and baby's birth, both physically and emotionally.

As NNUs become more family centred, parental and family support constitutes an increasing and important part of the role of the neonatal nurse (Stewart 1989, Sparshott 1990). These authors suggested that strategies to support parents/families and enhance positive parent baby interaction begin on admission of the baby to the NNU and are considerable in the first few days of life. While the strategies may lessen in intensity during subsequent days, they generally require to be sustained in varying forms through the baby's stay. A meta-analysis of studies undertaken to evaluate these strategies by Barrera and Rosenbaum (1992) revealed that many are successful in the short-term, although their long term impact has not been sufficiently evaluated.

Niven et al (1993), using a semi-structured taped interview with 30 women who had had their preterm baby at home for at least four weeks, quantified their perceptions of their attachment to their baby. They concluded that mothers of preterm babies experienced some attachment to their baby during pregnancy but this feeling was reduced or was completely lacking at birth and in the initial days when their baby was in the NNU. Their feelings of attachment gradually improved and were much higher after the babies were discharged home. It is uncertain whether there are strategies that could help maintain and enhance the maternal feelings of attachment

to their baby throughout the experience of giving birth to a preterm baby and his admission to the NNU.

1.3 Preparation for NNU care

Preparation for stressful events has been shown to be effective in making the adjustment to that event, when it actually happens, more positive (Parkes 1975). This has been shown to be true in relation to preparation for parenthood classes about normal pregnancy and childbirth when women, who felt informed and supported socially and psychologically, had more positive childbirth experiences (Elbourne et al 1989). However these benefits cannot be gained if women do not attend the classes and evidence suggests that less than fifty percent of pregnant women do actually attend (Hancock 1994). No figures were located to indicate the percentage of prospective fathers who attend classes. Whether information about NNU care is included in preparation for parenthood classes could not be determined from the literature. Lay literature available to prospective parents tends not to refer to NNU care. When NNU care is referred to in lay literature, only minimal information is given and positive outcomes for the babies are emphasized.

It has been suggested that abnormal aspects of pregnancy, childbirth and parenthood are too distressing for parents to discuss resulting in unnecessary stress during what should be a happy experience (Greig 1998). However this has been shown not to be the case. Parents who were given full information about prenatal screening tests for abnormalities did not find it upsetting and appeared less anxious than those who did not receive the information (Thornton et al 1995). Literature could not be located which indicated whether information about NNU care would be equally as helpful to parents.

In a review of the literature on the effectiveness of prenatal education, Nolan (1994) concluded that women want honesty and realism from those teaching preparation for parenthood classes and want an agenda that suits their needs. Therefore if women

want information about NNU care, it is reasonable to suggest that it could be discussed openly and honestly with them.

Parents who expect their baby to be admitted to NNU, are usually offered a tour of NNU to meet the staff and see where their baby will be cared for (Boxall and Whitby 1983). This strategy also provides information about NNU care to parents. However this is usually undertaken when the woman is admitted to hospital and/or is in early labour, thus her receptivity to information could be questioned (Redshaw et al 1996). This gives more credence to the argument for such information about NNU care/NNU tour to be given during pregnancy. As part of a large Department of Health survey of neonatal nursing, Redshaw et al (1996) concluded that there should be more prenatal preparation for parents about NNU care. However the content, presentation and timing of such preparation was not elaborated on. Because the extent of the provision of prenatal preparation of parents for NNU care was not identifiable from the literature, it was difficult to judge how much would constitute 'more'.

Previous experience is considered a form of preparation for a subsequent event (Lazarus 1966, Kaplan and Mason 1967, LeMasters 1967). However the effects, if any, on parents of previous NNU experience during a subsequent admission were not discussed.

1.4 Justification for the 'study'

Although Klaus and Kennell (1982) moderated their 1976 recommendations (Klaus and Kennell 1976), they continued to contend that positive interaction of parents with their baby should be encouraged as soon as possible after birth and with as little separation as possible. However if the baby is admitted to the NNU, this separation was linked with the possibility of less positive parent-infant interaction (Klaus and Kennell 1982). If parents experience a crisis reaction to their baby's admission to NNU (Caplan et al 1965, McHaffie 1987 and 1990, Affonso et al 1992), and/or

mothers lose the prenatal feelings of attachment to their baby (Niven et al 1993), interaction with their baby may also be disrupted.

Preparation for stressful events has been shown to be beneficial in a variety of situations, including some in the maternity services (Elbourne et al 1989, Thornton et al 1995). However there was an apparent lack of evidence related to prenatal information or previous experience as preparation of parents for NNU care. As a preliminary step, establishing the nature of information given by midwives to parents about NNU care and how and when that information was given was judged appropriate, and a survey was conducted (Greig 1998) (see Appendix 2).

There was an apparent lack of evidence as to whether prenatal information or previous experience as preparation of parents for NNU care was beneficial or not to the parents in relation to their feelings, needs, and interaction with the baby. Therefore comparison of the feelings, needs and parent-baby interactions of prepared and unprepared parents was judged an appropriate enquiry.

NNU staff members have a parent support role, generally intensive in the initial days after the baby's admission, with the main focus on promoting positive parent-baby interaction (Stewart 1989, Sparshott 1990). There was an apparent lack of evidence as to whether prenatal information and/or previous experience of parents about NNU care had any effect on the intensity of the support required from NNU staff. If the inadequate NNU staffing levels persist in the UK (Redshaw et al 1996, Report of working group reviewing neonatal services in Scotland 1997), parental support may be affected. Therefore this aspect was judged appropriate to investigate from the perspectives of prepared and unprepared parents and NNU staff.

1.5 Research objectives and research questions

From the review of the literature and consideration of the theoretical framework, the following three research objectives and five research questions for the 'study' were devised.

1.5.1 Research objectives

The objectives of the 'study' are:

- To determine the extent to which current prenatal preparation of parents for NNU care meets the perceived needs of parents whose baby requires intensive or special care in a NNU;
- To determine if there is any difference between parents 'prepared' in different ways and between 'prepared' and 'unprepared' parents in their anxiety, their initial contact with their baby in NNU and the level of support offered by NNU staff.
- To determine how NNU staff perceive the level of support required and given to parents 'prepared' in different ways about NNU care and to 'prepared' and 'unprepared' parents.

1.5.2 Research questions

The research questions for the 'study' are:

- What prenatal preparation about NNU care have parents experienced?
- What anxiety do parents experience in the first days after their baby's admission to the NNU?
- What needs do parents perceive they have in the first days after their baby's admission to the NNU?
- To what extent has any prenatal preparation parents have experienced met these initial perceived needs?

- What perceptions do NNU staff have of the support parents require in the first days after the baby's admission?

1.6 Chapter outlines

The outline of the seven main divisions and chapters given in this section will help orientate the reader to the structure of the thesis. There are seven main divisions in the thesis, the introduction, the literature review, the methods, the findings, the discussion and the conclusion. Each division may comprise of one or more chapters.

The introduction is comprised only of chapter one that provides background information about the development of NNUs, how NNU care is organised and staffed, and what the environment of the NNU is like. The importance of parents in NNU is clarified by looking first at how the part they play in NNU care has changed over time. There is then an overview of parental feelings when their baby is in the NNU, and the support they require from NNU staff. The chapter continues with consideration of what preparation for NNU care is available, leading into the justification for the study. The research objectives and questions are then listed.

The literature review is comprised of three chapters. Chapter two includes sections on the background, and an introduction, to the literature review. The review then begins with a focus on literature pertaining to parental feelings in uncomplicated pregnancies and childbearing. As parents often experience stress and anxiety at these times, models of stress, coping with stress, and anxiety are also addressed.

In chapter three the literature related to parents' feelings following their baby's admission to NNU is reviewed. This can be considered a crisis for parents, therefore crisis and crisis intervention are overviewed. Parents can also experience grief when their baby is admitted to NNU, therefore some of the main literature on grief is reviewed.

Chapter four is the final chapter of the literature review, and focuses on literature related to the external influences on the parents' experience. These include the four types of stressors parents can encounter in NNU. Preparation is a major variable of interest in the 'study', therefore in chapter four there is also a review of the literature about preparation for potentially stressful, or anxiety-provoking events, or crises, whether or not they are predictable. There is specific focus on primary crisis prevention and the preparation of parents for the admission of their baby to NNU.

The theoretical framework for the 'study' is comprised of only chapter five, in which the theories of crisis and crisis intervention are considered.

The methods for the 'study' are explained and justified in six chapters. The division was designed to facilitate reading. In chapter six, there is an introductory section explaining the purpose and the content of the six chapters, and a summary of the methods is given. The main part of chapter six explains the research approaches used, particularly the qualitative approach. Chapter seven focuses on the research design, giving details of the descriptive and comparative designs chosen.

Chapter eight focuses on the participants and the techniques used to recruit samples of parents, babies and NNU staff. In chapter nine the choice of data generation tools is explained and justified. Chapter 10 gives an explanation of the procedures that were undertaken to conduct the 'study', including the ethical considerations that applied. In chapter 11, the final chapter to focus on methods, the management of both the qualitative and the quantitative data is explained.

The findings are presented in five chapters, again to facilitate reading and understanding. The first of four chapters to pertain to parents and their babies is chapter 12, which includes introductions to the presentation of the findings, and to the findings related to parents and their babies. These introductions are followed by descriptions of the findings related to parents and their babies. Chapter 13 summarizes the findings from the State Trait Anxiety Inventory (STAI) (Spielberger

et al 1983) data analysis, with comparison of the findings related to mothers and fathers. The findings of the analysis of qualitative data from parents are reported in chapter 14, with discussions of the four main categories that emerged from the data. When qualitative and quantitative measures of parental anxiety were compared, congruity and incongruity were determined and classified. These classifications are explained in chapter 15, using examples of each classification.

The final chapter in the presentation of findings is chapter 16, in which the findings related to NNU staff are reported. There is a description of the quantitative findings followed by explanation of the five categories to emerge from the qualitative data.

While some discussion of findings is included in chapters 14 and 16, chapter 17 is devoted to the main discussion of findings. This chapter is the only one in the discussion division and is structured around the five research questions and includes some of the implications for practice and limited recommendations from the findings.

The final division in the thesis is the conclusion and it is contained in chapter 18. This chapter focuses on the presentation of the conclusions related to the five research questions, followed by the presentation of the conclusions related to the three research objectives. Limitations of the 'study' are identified throughout the thesis but are also summarized in chapter 18, along with an indication of how they were minimized in the 'study' and/or how they can be avoided in the future research that is recommended. Because of the theoretical and practical limitations, generalization of the findings is restricted, therefore only implications for practice and limited recommendations are identified in the chapters related to the findings and in chapter 17, but they are also listed in this final chapter.

Following the list of references and the bibliography, appendices are included. The information in the appendices complements the material in the main thesis.

The structure of the thesis is designed to facilitate reading and understanding. The chapter that forms the beginning of each of the seven divisions usually has guidance as to the format and content of the division. Each chapter usually begins with an introduction to its content, and the material is usually arranged in sections and sub-sections. To orientate the reader, and depending on the content, there may be a small introductions or introductory paragraphs in the sections and sub-sections. Similarly, when pertinent, summaries are included to sections, sub-sections and chapters. To help the reader locate information, cross-referencing to specific chapters and sections occurs throughout the thesis.

Literature review

Chapter 2

Introduction

This chapter has three sections. The first section gives a background to the literature review. Section two provides an introduction to the full literature review, as it is contained within three chapters. The third and main section is devoted to the first part of the literature review.

2.1 Background to the literature review

While originating in the late nineteenth century, the specialised care of preterm and sick neonates in NNUs developed rapidly from 1960 (see section 1.1.1), and the rate of development is ever-increasing (Wyly 1995a). Although research was conducted into aspects of care in the early phase of NNU development, in the latter part of the twentieth century there was an increase in investigations and in publications.

With this historical perspective, it appeared appropriate to predominately select publications relevant to the 'study' dating from 1960. Data generation for the 'study' began in August 1997, therefore July 1997 was the end date selected for publications that were included in the literature review in chapters two, three and four of this thesis. The exception to this was the article by the 'researcher' that was published in 1998. The full research report was available in 1996, but only in two libraries of one university (Greig 1996). The more widely available publication (Greig 1998) was considered to be more helpful should any reader wish to access it, therefore it is referred to throughout the thesis. Because the volume of research being conducted during the late 1970s and 1980s in relation to parents and their babies in NNUs was considerable, publications from these decades were prominent in the literature selected for review.

Pertinent literature was also accessed from the beginning of data generation in August 1997 until the end of data generation in May 1999 and continued until the end of 1999, when the discussion of findings was being drafted. Critique of this

literature is not included in the literature review in chapters two, three and four but as appropriate, in later chapters (see chapters 14, 15, 16 and 17).

The computerised and written data bases of CINHAL and Medline were initially searched using the key words, 'parent', 'education', 'preparation', 'infant', 'neonatal care', 'antenatal classes', 'anxiety', 'stress', 'grief', 'crisis', 'midwife', 'neonatal nurse', and 'interaction'. The literature accessed led to further material being selected. The library catalogues of the University of Edinburgh and Napier University, Edinburgh were also searched for publications related to the initial key words.

There was an extensive literature base on the feelings of mothers in relation to uncomplicated pregnancy, birth and the postnatal period. There was less literature related to fathers. There was a substantial literature base on the feelings parents experienced when their preterm baby was being cared for in a NNU, the possible causes of these feelings and how staff and parents dealt with these feelings during and after the hospitalisation. There was less literature related to the experiences and feelings of parents whose baby was born at term and required NNU care. The literature on parent-baby interaction was extensive. Part of the role of NNU staff is to interact with parents and to supportively intervene to help parents cope physically and emotionally with the baby's admission to the NNU, especially in the first days after admission. There was considerable literature related to the broad topics of staff interaction with parents and supportive interventions but there was less focusing on the initial period after admission. This appeared to be an area in need of research.

There was a substantial literature base on antenatal clinics and preparation for parenthood classes, their conduct, content and relevance to parents. However there was little in this literature related to preparation of parents for the possibility that their baby might require NNU care and even less linking this literature base with the feelings parents experienced when their baby was admitted to NNU. Therefore the link between prenatal preparation of parents for NNU care and the effect, if any, on

how parents feel when their baby requires NNU care, appeared to be an area in need of research.

No literature was located that identified linkage between parents' feelings after preparation for the possibility their baby would require NNU care and the effect, if any, on interactions with staff and the supportive interventions required by parents in the initial period after the baby's admission to NNU. Neither was any literature located that linked parents' feelings after preparation for the possibility their baby would require NNU care and the effect, if any, on the interaction parents had with their baby, especially in the initial period after the baby's admission to NNU. Therefore, these aspects also appeared to be areas in need of research.

To try to establish whether individuals who were prepared for other events or situations experienced a beneficial effect or not on the subsequent experience or feelings, the literature search was expanded. The key words of 'preoperative education' and 'prenatal testing' were selected and the previously identified databases searched. While there are obvious differences, the similarities between these situations and the situation parents might experience if their baby was admitted to a NNU, were considered sufficiently close for pertinent literature to be reviewed. The similarities were the preparation of one or more people for a potentially serious event involving themselves or a close relative, the unexpected nature of the experience, and the preparation for diagnosis of a potential complication associated with pregnancy. The results of the studies informed the formulation of the research questions for the 'study'.

To try to establish whether preparation for these other events had any effect on parents' interactions with staff or the supportive interventions they required, the key words of 'interaction with staff' and 'supportive intervention' were included in the expanded literature review. No literature was located.

A review of the pertinent literature was undertaken, with fuller critique of the papers most specifically related to the focus of the 'study'. Publications considered classic were also included, although detailed critique of some of these works was not undertaken.

2.2 Introduction to the literature review

For ease of reading and comprehension, the literature review is presented in this and the following two chapters. This chapter has already included the background to the literature review, and this section gives and overall introduction to the review. In an effort to work from the 'normal' to the 'abnormal', the literature reviewed in the third and main section of this chapter focuses on the 'normal', with the literature related to 'parental feelings in uncomplicated pregnancies and childbearing'. There are four sub-sections, one each for discussion of stress, coping with stress, anxiety, and the specific feelings experienced by parents during uncomplicated pregnancy and childbearing.

In chapter three there is a review, in three sections, of the literature related to 'parents' feelings following their baby's admission to NNU'. In the first section there is a succinct review of studies related to crisis and crisis intervention, succinct because these topics are further discussed in the theoretical framework in chapter five. The second section focuses on aspects of grief. The final section includes a review of literature related to parents' feelings during the period after their baby's admission to NNU. This latter section is presented as a chronological review of the studies.

Chapter four focuses on the 'external influences on parents' experience' and is divided into two sections. The first section includes a review of literature related to the stressors parents experience during their baby's stay in the NNU. This section is structured according to the four categories of stressors usually reported in investigations.

The second section of chapter four focuses on the preparation for potentially stressful or anxiety-provoking events or crisis, and is divided into two sub-sections. In the first, there is a review of literature related to types of preparation considered as primary crisis prevention. There is discussion of preoperative preparation, antenatal care, preparation for parenthood classes, and preparation for related unpredictable events. In the second, there is a review of literature that addresses preparation of parents for the admission of their baby to NNU.

2.3 Parental feelings in uncomplicated pregnancies and childbearing

Introduction

In this section there is a review, in four sub-sections, of the literature related to parents who experience uncomplicated pregnancies and childbearing. Pregnancy, the birth of a healthy baby at term, and the initial period of parenthood are considered events which demand considerable physical and psychological adjustment and accommodation by the parents. However these events are viewed as important developmental stages in the lives of adults. Duvall (1977), Sweet (1988) and Sherr (1995) acknowledged that in those events there were aspects that were joyful yet also aspects that were stressful or anxiety provoking for parents.

Holmes and Rahe (1967) developed a list of forty-three stressful situations in life, ordered from the most stressful to the least stressful situations. Pregnancy was listed as the twelfth most stressful event. Therefore in the first of the sub-sections there is a focus on stress. Three models of stress are identified and discussed.

Parents usually try to cope with their stress, therefore in the second sub-section, there is consideration of methods of coping with stress. A model of stress

management is presented and there is comparison with constructive and destructive coping strategies.

In the literature reviewed for the 'study', stress and anxiety were used separately or interchangeably. Because it was important to understand the differences and similarities between the words stress and anxiety, in order that the literature could be better understood, the concept of anxiety is explored in the third sub-section.

In the fourth sub-section the literature related to the specific feelings experienced during uncomplicated pregnancies and childbearing by mothers and fathers is reviewed.

2.3.1 Stress

A precise definition of the word stress is problematic, as stress can be considered as a stimulus, or as a response, or as a combination of a negative situation and a negative subjective feeling (Bond 1986). These considerations are derived from the three main views or models of stress. Therefore in this sub-section, these models of stress will be discussed.

2.3.1.1 Models of stress

There are three main models of stress. The stimulus model, the response model and the transactional model are described in this sub-section.

2.3.1.1.1 Stimulus model of stress

According to Bailey and Clarke's (1989) review, the stimulus model of stress was based on one of the laws of physics, Hooke's Law of Elasticity. This law suggests that when a load (strain), is applied to metals, there will be deformity in the metal (along the line of stress). This is a cause and effect relationship that can be calculated mathematically. This law of physics can be translated to individuals. The load is interpreted as the stress or stressor which, when applied to the individual results in strain.

However there are problems with the direct translation of a law of physics to individuals. In the summary of the three main problems of the stimulus model of stress in their review, Bailey and Clarke (1989) suggested the first was the difficulty identifying stressors that result in strain in everyone or in the same person at all times. The second was the varying degrees of stress that cause strain, and the third was the failure of the model to take account of the individual's ability to cope with the stressor. Such problems resulted in a lack of regard for the stimulus model and efforts were made to present an improved model (Bailey and Clarke 1989).

2.3.1.1.2 Response model of stress

Selye (1950) proposed a response model of stress to overcome some of the problems associated with the stimulus model. He suggested that a stressor or threat could be physical or psychological and proposed that there was a common basic reaction to stressors which was a whole body response via the sympathetic nervous system (SNS) which he called the General Adaptation Syndrome (GAS). Selye used the two words, stressor and threat, interchangeably. For ease of reading and understanding, stressor will usually be used in this thesis to refer to something that can induce a stress response. The GAS, a biological concept of stress, was founded in the observations Selye originally made of the general condition of ill patients, apparently independent of their disease-specific signs and symptoms. Later, during animal work on identification of an ovarian hormone, Selye noted that the animals had a common reaction to the stimuli he inflicted on them, independent of the action of the stimulus. This reminded him of his previous observations and he then worked to define more precisely the nature of the body's response to stressful stimuli, a response model of stress.

Selye (1950) suggested that in response to any demand placed on an individual (stressor), the first stage of GAS is one of alarm, in which the SNS triggers secretion of glucocorticoids and catecholamines. These hormones prepare the body to deal with the perceived stressor by the provision of glucose for energy, an increase in

heart rate, respiratory rate, blood pressure, oxygen consumption and muscular tension, and by diversion of blood to vital organs. The individual also experiences an emotional response described as excitement or anxiety. In explanations of GAS, Selye (1976) suggested that this stage could be viewed as a positive one for the individual where learning and enjoyment could occur, a state of eustress. However when this and later stages were upsetting or caused physical or emotional damage, a state of distress was present.

If the stressors are short-lived, the reactions diminish and body homeostasis returns. However, Selye (1950) suggested that if the stressors persist, the second GAS stage of resistance, begins. In this stage, the stress hormone levels remain high, the physiological effects continue, and there is a change in the emotion experienced to one of increased anxiety or stress. There is increased production of cortisol that affects the body's metabolism and enables some resistance to the physical and psychological effects of the stress response. During this stage, the individual's ability to deal with other demands is reduced, and this can result in increased vulnerability to other stressors. If the stressors are chronic or severe, the body's adaptations cannot be sustained and the third stage of GAS, exhaustion, becomes apparent.

The principle of GAS is that there is a common basic response to stressors but the extent of the response and the degrees of resistance and exhaustion Selye suggested are based on an individual's adaptive energy. Selye (1950) considered that adaptive energy was related to the individual's perception of the stressor, previous experience of stressors and the coping mechanisms the individual had developed to deal with stressors. He concluded that psychological factors could therefore be stressors and also part of the body's ability to cope with stressors, its adaptation.

Bailey and Clarke (1989) summarised some of the criticisms of Selye's (1950) response model of stress. Firstly, while Selye suggested that GAS was part of the body's effort to maintain homeostasis, he appeared not to consider the role of the

central nervous system in the process of homeostasis. Secondly, he emphasised the role of adrenal hormones but did not sufficiently acknowledge the role of other hormones in the stress reaction. Thirdly, he paid little attention to the behavioural component of the alarm stage of adaptation, suggesting that an individual's role in response to stressors was passive. Bailey and Clarke (1989) suggested that such criticisms stimulated further development of a model of stress.

2.3.1.1.3 Transactional model of stress

The views that stress cannot be defined in terms of a cause and effect relationship and that individuals can be active in their response to stressors led to the development of the transactional model of stress. Lazarus (1966) proposed a cognitive-phenomenological-transactional model of stress and coping. He conducted a series of experiments in which participants were shown films of unpleasant situations. The feelings expressed by the participants and their biophysical measurements taken during and after the films, varied according to how the films were introduced, either positively or negatively.

The model's cognitive element included the fact that the individual appraised situations that confronted him, and his ability to cope with the situations was based on experience and memory. The personal way in which an individual perceived situations gave the phenomenological perspective to the model. The transaction element was the interaction between the individual's perceptions and the situation, whether he perceived the situation as threatening or not and whether he felt able to cope or not.

Lazarus (1971) concluded that the experience of any situation was an active process for an individual and the outcome depended on perceptions of the situation and of their ability to cope with the situation. The physiological, psychological and sociological elements impacting on an individual interacted with each other and affected perceptions of the situations, coping strategies and resources. The degree of stress depended on the individual's perception of the imbalance between the threat

or demand and coping strategies and resources. If an individual perceived a situation as threatening and that he lacked the ability to cope, Lazarus suggested that this was stressful. He also suggested that stress was negative and potentially harmful because of the physiological and psychological consequences. Lazarus (1966) appeared to include many of Selye's (1950) GAS signs and symptoms as consequences of negative stress.

Lazarus' contention that individuals did not experience stress to the same extent, nor was their reaction to stressors the same in similar circumstances has been supported by Chernis (1980), Bond (1986), and Sherr (1995) following their independent reviews of the literature. However, unlike Lazarus, from their reviews of the literature, these authors also conformed to the view that the experience of some stress was necessary.

If individuals have little or no stress in their lives, they become bored or frustrated. However when there is a degree of stress, individuals become more alert, have more energy and have more feelings of wellbeing, as their resources are balanced with the demands made on them. This experience is termed positive stress (Chernis 1980, Bond 1986, Sherr 1995).

If stressors increase and the body's resources are insufficient to meet the demands made on them, physical and psychological health can suffer. This experience is termed negative stress (Chernis 1980, Bond 1986, Sherr 1995). Continuation of negative stress can result in progressive deterioration of the individual's health, with increased experience of GAS symptoms, until the severe reaction of burnout is reached, similar to Selye's (1950) GAS third stage of exhaustion. In order to describe the ultimate effect of negative stress in the work situation Maslach (1978), originally used the word burnout. He suggested that this condition could be characterised by depression, apathy, hostility, absences from or over-involvement in work, but ultimately led to physical and psychological breakdown.

The transactional model of stress included positive and negative stress, physical as well as psychological elements, and an appreciation of individuals' varying perceptions. It appeared suited for use as the interpretation of stress within the 'study'. However, as the transaction model of stress included coping as part of the model, it was important to explore this aspect of the model in more detail and this exploration is reported in the following sub-section.

Summary

Stress can be interpreted in several ways. The models of stress only as a stimulus and stress only as a response have several limitations. Situations that may be joyful to one individual at one point in time may be perceived as threatening and stressful for that individual at another point in time or for another individual. The degree of perceived stress, and the physiological, psychological and behavioural responses, vary and depend on many individual complex factors. The transactional model of stress appears to take these factors into account and there appear to be fewer limitations than with the other two models. The transactional model of stress was suggested as an appropriate one for nurses to use in their practice as it fits with the holistic nature of human beings and nursing (Bond 1986, Bailey and Clarke 1989). It was also considered relevant for the 'study'.

The factors that induce the stress response were identified as stressors, both positive and negative. The concepts of positive and negative stress were explained. Positive stress can be an advantage, stimulating the individual. However, when negative stress is experienced, anxiety is a frequently reported feeling.

In the literature, stress was seldom discussed in isolation. Coping with stress was usually included and therefore it will be discussed in the following sub-section.

2.3.2 Coping with stress

Methods of coping with stress are usually included in the literature that considers stress. However, it is common that the stress that requires to be coped with is the

stress that is negative in nature. Because positive stress is considered beneficial, it is portrayed as something to be experienced and welcomed, whereas negative stress is something to be coped with.

The focus of the 'study' is the experience of parents whose baby is admitted to the NNU. This experience has been viewed as one likely to induce negative stress (Caplan et al 1965). Therefore, in this section, coping with negative stress is discussed to determine if there is relevance to parents' experience.

As part of the transactional model of stress proposed by Lazarus (1966), the element of coping with negative stress was presented as a model of stress management. An explanation of Lazarus' (1966) model follows.

2.3.2.1 Model of stress management (Lazarus 1966)

While the stimulus and the response models of stress suggested passivity, the transactional model of stress Lazarus (1966) presented included suggestions of active attempts to manage, control or alter situations perceived as threatening or stressful in order that the threat or stress was reduced. Lazarus described four stress coping mechanisms that individuals used.

The first mechanism is anticipatory action that takes the form of preparation for a situation that is likely to be stressful, in an effort to reduce the stress experienced when that event actually occurs. Lazarus (1966) suggested that attendance at antenatal classes in which the potentially stressful experience of labour and birth could be prepared for was an example of anticipatory action. Whether anticipatory action is successful in reducing the stress experienced depends on individual personality and circumstances. This strategy is limited in its usefulness when a situation suddenly occurs with no time for preparation. However consideration of anticipatory action in relation to parents of babies in NNU was one of the factors that led to the survey (Greig 1998) and to the 'study'.

Attack was the second mechanism that Lazarus (1966) proposed and it involves destruction of the stressor. Such action may be very difficult or impossible to achieve because of the particular circumstances. However as an alternative version of attack, it was suggested that, for example, rigid adherence to a system or routine will allow an individual a degree of control, therefore a reduction in perceived stress. The attack action has to persist otherwise the stress is experienced.

Avoidance was the third coping mechanism (Lazarus 1966). The individual simply avoids situations in which the stress cannot be coped with. Not undertaking a course of study that involves a written examination enables an individual to avoid the stress associated with this type of assessment. This strategy can only be successful if the stressful situation can be anticipated.

One form of avoidance includes the ego-defence mechanisms, originally described by Freud and summarised by Bailey and Clarke (1989). These mechanisms include denial, repression, regression and intellectualisation. While such mechanisms have been considered unhelpful, in some situations they enable the individual to have more time to come to terms with potentially overwhelming negatively stressful situations. The work of Kubler-Ross (1969) and Parkes (1972) gave excellent examples of denial as a positive stage in the process of grieving, usually considered a negatively stressful situation.

Avoidance mechanisms should only be used in the short-term, otherwise negative consequences may occur. The 'learned helplessness' phenomenon described by Seligman (1975) is considered a negative consequence of long-term avoidance action. Also an individual can trigger a personal stress reaction due to the awareness that the avoidance behaviour is being used.

Apathy and inaction together were the fourth coping mechanism that Lazarus (1966) described. When faced with a stressful situation, the individual does nothing. This reaction resembles the experience of burnout described by Maslach (1978).

Further understanding of stress has led to reclassification of the coping mechanisms suggested by Lazarus (1966). These mechanisms are usually now referred to as constructive and destructive coping strategies and these are explained in the following sub-section.

2.3.2.2 Constructive and destructive stress coping strategies

Bond (1986) suggested that coping strategies could be considered as constructive, if they could effectively reduce an individual's perceived stress. However other strategies could be considered as destructive, as using them did little to reduce the individual's stress and could actually increase the perception of stress. Both constructive and destructive stress coping strategies are explained in more detail.

2.3.2.2.1 Constructive strategies

From her review of the literature, Sherr (1995) focused only on a constructive approach to coping with stress. She suggested that individuals needed to understand what stress was, what caused it and what the results of stress were. Prediction of stressful situations, anticipation of stress, preparation for stress and acknowledgement of stress could all reduce the perception of negative stress. These propositions are similar to the first coping mechanism of preparation that Lazarus (1966) suggested.

In her review, Bond (1986) suggested that constructive coping strategies had four aspects, three of which were indirect measures and one was a direct measure. The first indirect measure of distraction includes involvement in hobbies, exercise or social activities. The second, self-nurturance, takes the form of rest and relaxation, holidays, or special treats. Both of these aspects can be considered as related to the attack or avoidance actions suggested by Lazarus (1966). Expression of emotions is the third indirect measure and includes discussion of feelings, crying, or creative expression in poetry or art.

The fourth constructive coping strategy is a direct measure where the stressful situation is actively confronted and then appropriate problem-solving techniques are used to change the nature of the situation, making it less stressful. This strategy can be directly related to the attack action suggested by Lazarus (1966), but was presented as having a more positive and more constructive stress reduction outcome. However, there are some situations in which direct action or coping are impossible and indirect coping strategies have to be employed. It is also recognised that individuals can use combinations of the coping strategies when faced with situations that are stressful and can vary these combinations from one stressful situation to another and can change coping combinations with time (Bailey and Clarke 1989).

The ability to successfully cope with stress has long been recognised as being affected by the social support an individual can access. While social support has been defined in several ways, the definition suggested by Quick et al (1996) was comprehensive.

Social support was considered

"... as the provision of positive psychological, emotional, and material resources to a person through interpersonal relationships" (Quick et al 1996 p 269).

Friends, family, work colleagues, the church/one's faith, and professionals have all been recognised as appropriate social supporters for particular individuals in specific situations (Caplan 1964, Gottlieb 1996). In their review of the literature Quick et al (1996), concluded that there was a very strong positive correlation between the provision of social support and improved physical and emotional health.

The benefits to health of positive social support have been recognised by Oakley (1992). Oakley has been interested in the well-being of mothers and babies for much of her career. Following the classic study of the experience of becoming a mother (Oakley 1979), her interest has become more focussed on social support during

pregnancy and its relationship with pregnancy outcomes. In an important publication Oakley (1992), succinctly summarised the literature on the positive relationship between social support and health, and the variations in what was perceived as social support.

Oakley's (1992) publication arose from an experimental study (Oakley et al 1990) in which well defined social support was given by one of four research midwives to 255 pregnant women randomised to the intervention group from a convenience sample of 509 recruited in four English urban hospitals' antenatal clinics. Clinical care was not given by the research midwives but by the community midwife, general practitioner or obstetrician as required. The remaining participants (254) formed the control group and received the antenatal care usually provided by midwives, general practitioners or obstetricians. While a small percentage of women were lost to the study or failed to complete the full data collection strategy, data were analysed from more than 200 women in each group. The groups were comparable for all parameters and it was noted that similar numbers of women in both groups had more than one previous low birth weight baby, had no live-in partner, were of a low social class, and had poor housing. These factors are considered to predispose women to higher obstetric risk (Korones 1986).

The data included information in notes taken by a research midwife on each visit about the initiator, purpose, content, length and outcome of the visit. Tape recording parts of the three main visits by the research midwife generated qualitative data, and quantitative data were retrieved from hospital case notes. A questionnaire was also sent six weeks postnatally to each participant.

Oakley et al (1990) indicated that 15 research hypotheses in favour of the experimental group had been developed although these were not clearly identified in the report. Some of the assumed hypotheses were referred to in the discussion section of the report. A sign test was undertaken and indicated a significant probability that 13 of the hypotheses would be supported ($p = 0.0009$). The two

hypotheses that were unlikely to be supported were not identified, and Oakley et al (1990) indicated that the statistical significance of the findings was open to debate as not all the hypotheses were independent.

Inferential statistical analysis of the quantitative data revealed that significantly more women in the control group were admitted to hospital antenatally (95% confidence intervals = 0.64 – 0.95). There was a significant difference in methods of resuscitation, in that the babies in the intervention group required less invasive methods than did the control group babies. However neither the level of significance nor the confidence intervals were reported for this conclusion.

Oakley et al (1990) reported that the remaining 13 research hypotheses were supported, although the required levels of significance were not reached in all of them. This appeared to be a very general conclusion. It would have been more reasonable to make a statement that indicated which specific hypotheses had been supported and which had been refuted, with the probability levels or confidence intervals also reported.

A possible explanation for the hypothesis about mean birth weight being refuted was given, with the admission that the original hypothesis was probably too ambitious. A difference of 150 grams was chosen as it had been the weight differential reported in studies of maternal smoking. The implication suggested by this rationale was that the effects of social support on birth weight would be the same as those found in the babies of women who smoked and those who did not. However Oakley et al (1990) also indicated that if a more realistic differential had been chosen, the required sample number would have increased, making the study costs prohibitive. Although the other refuted hypotheses are not discussed in any detail, it is possible that these may also have been unrealistic.

While the value of inferential statistical testing has been questioned (Robson 1993), the cost effectiveness of, and the morality of using public money, (Oakley et al's

(1990) study was funded by the Department of Health and Social Security) for a randomised controlled trial that set unrealistic hypotheses could be questioned.

Oakley et al (1990) reported that the qualitative data analysis indicated that the women appreciated the interventions of the research midwife, particularly in relation to her listening to them. However there was no explanation of how the qualitative analysis had been conducted and there were indications that the qualitative data had been quantified and then quantitatively analysed.

Oakley et al (1990) concluded that the benefits of social support to the emotional health of this sample of at risk women with a range of negative stressors affecting their lives were considerable and supported previous findings. It was recommended that midwives be enabled to offer such care for all pregnant women. However, there was recognition that many social constraints could affect the impact of such interventions, and the conclusion was that there was a need for governmental social policy changes to reduce social deprivation and the

> "...health-denying conditions in which many mothers and babies live..."
>
> (Oakley et al 1990 p 161).

Caplan (1964), Gottlieb (1996), Oakley et al (1990), and Quick et al (1996) suggested that social support was positive. However Quick et al (1996) recognised the work of Shumaker and Hill (1991) that some interpersonal (social) relationships were negative and could ultimately be an additional source of stress. Shumaker and Hill (1991) suggested that not only should the level of social support be flexible and meet the needs of the individual, so too should be the social relationships offering the support.

Therefore, if some social relationships result in increased negative stress, they could be regarded as destructive. The more common destructive coping strategies are summarised below.

2.3.2.2.2 Destructive strategies

Destructive strategies are also referred to as maladaptive coping strategies. The more commonly identified ones are substance abuse, aggression, physical problems and absolute denial of problems, which could include chronic absenteeism from work (Bond 1986, Powell and Enright 1990). These strategies could be related to the avoidance or apathy and inaction mechanisms suggested by Lazarus (1966) and are more likely to be used when the individual has few, if any, appropriate personal support mechanisms.

Summary

As with stress, coping can take several forms, but coping is usually discussed in relation to negative stress. Depending on the degree of negative stress and the individual's physiological, psychological and behavioural responses, coping may be achieved in constructive/adaptive or destructive/maladaptive ways. Social support appears to be an important aspect of coping with negative stress. The extreme form of coping in a maladaptive way, burnout, is considered a form of inability to cope with the degree of negative stress.

As indicated previously, positive stress can be an advantage, stimulating the individual. However, when negative stress is experienced, anxiety is a frequently reported feeling. In some literature, anxiety and negative stress are inappropriately used synonymously, but differentiation between anxiety and negative stress was considered relevant to the 'study'. Therefore anxiety is explained further in the following sub-section.

2.3.3 Anxiety

Anxiety and negative stress can be used interchangeably in the literature. In this thesis, they will be used independently. Stress and coping with stress were discussed in sections 2.3.1 and 2.3.2, therefore anxiety is discussed in this sub-section. The differences between anxiety and negative stress will be emphasised, but an explanation of why they are often used synonymously will be suggested.

Anxiety has been defined as

"... a state of fear and desire regarding something doubtful ... a state of chronic apprehension..." (Kirkpatrick 1983 p53).

Sigmund Freud is known to have recognised the significance of anxiety, and suggested it was a specific unpleasant emotional state with experiential, physiological and behavioural components. While Freud was principally concerned with the relationship of anxiety and psychiatric conditions, anxiety was subsequently recognised as having two different interpretations. Spielberger et al (1983) considered anxiety as an emotional state experienced as part of the response to stress, but also as a feature of personality. They identified that there was little research on human anxiety before 1950, mainly due to difficulties defining anxiety and measuring it, but also the ethical problems of inducing anxiety in human subjects.

Cattell and Scheier (1963) suggested that anxiety could be considered as two theoretical constructs. Anxiety is a variable but unpleasant emotional state, usually transitory, that occurs in response to certain circumstances, state anxiety. Also, as part of their personality, individuals have a relatively stable underlying level of anxiety that determines how anxiety prone they are, trait anxiety. Spielberger and co-workers developed these constructs further in a series of studies, designing a valid and reliable tool to measure both, the State Trait Anxiety Inventory (STAI) (Spielberger et al 1977). This instrument will be discussed further in section 9.1.2.7 as it was used as a means of generating quantitative data as part of the 'study'. Cattell and Scheier (1963) and Spielberger et al (1983) suggested that anxiety, whether state or trait, was not one feeling but a combination of feelings.

Lang (1969), cited by Powell and Enright (1990), appeared only to consider anxiety as part of the response to negative stress and suggested a model of three systems, physical, cognitive and behavioural. When anxiety was experienced, the physical system of the model included feelings of increased heart rate, sweating and tension.

The cognitive system included thoughts of fear and the behavioural system led to running away or avoidance. This model overlaps considerably with the GAS proposed by Selye (1950) and may in part be responsible for the inappropriate interchangeable use of negative stress and anxiety in some literature.

Spielberger et al (1983) suggested that in specific circumstances, state anxiety can give positive feelings, although the accompanying SNS response can also be slightly unpleasant, being experienced as a dry mouth, perspiration and 'butterflies' (Spielberger et al 1983). Alternatively, if negative stress is perceived, the state anxiety experienced can increase to extreme levels, affecting overall health and functioning. The other signs and symptoms of GAS (Selye 1950) were also suggested by Spielberger et al (1983) as those that an anxious individual would experience.

If overall health and functioning are affected by extreme anxiety, anxiety disorders can be identified as part of a mental health/ill health continuum. Powell and Enright (1990) suggested that anxiety disorders can range from phobic states, through anxiety states and post traumatic stress disorders to atypical anxiety disorders (see also sections 3.1.1 and 5.1).

As a result of a programme of experiments, summarised by Spielberger et al (1983) the STAI was developed and refined. Spielberger et al (1983) presented normative data for state and trait anxiety and also presented overall conclusions. The normative data were used for comparison in the 'study', and the conclusions proposed by Spielberger et al (1983) assisted in the interpretation of the findings. The conclusions were that

- trait anxiety is part of personality and is more stable than state anxiety, although can be affected by it
- the relatively predictable way in which an individual generally views the world or responds to situations is an expression of their general level of anxiety and reflects their trait anxiety

- because past experiences of state anxiety may affect the level of trait anxiety, an individual with a high trait anxiety is more likely to experience a more profound state anxiety response in any given situation, than an individual with a lower trait anxiety in the same situation
- an individual with a high trait anxiety is also more likely to perceive a given situation as more stressful than it actually is
- just as trait and state anxiety affect perception, understanding can be affected so that high trait or state anxiety result in a reduced ability to process information or instructions as efficiently as an individual with lower anxiety levels (Spielberger et al 1983).

Spielberger et al's studies were conducted in the USA and this factor could reduce the reliability and validity of the STAI and the validity of the conclusions made by Spielberger et al (1983). However the STAI has been reliably translated into many languages, has been used internationally and has been adapted for use with children. The validity of the conclusions has also been demonstrated internationally and with varying populations (Spielberger et al 1983).

Sherr (1995) suggested that anxiety is only a problem if it is disproportionate to the degree of whatever is stimulating the feeling, referring to state anxiety. The stimulus to anxiety is often referred to as a stressor (Bond 1986, Niven 1992, Sherr 1995). This link with stressor and stress may have also led to the inappropriate interchangeable use of anxiety and stress in the literature.

As a symptom of the response to negative stress, reduction of state anxiety is achieved through the use of coping strategies similar to those for coping with stress and similarly either adaptive or maladaptive. Following reviews of the literature, Powell and Enright (1990) and Sherr (1995) proposed strategies for coping with anxiety that included preparation for anxiety by anticipation and education about the stressors. Anxiety reduction or control, and stressor or perception removal were also suggested as appropriate measures for coping with anxiety. If anxiety disorders are

present, counselling, self help techniques and anxiety management groups are alternative coping strategies.

Summary

Anxiety can be considered as a feeling associated mainly with the negative stress response. It is usually triggered by negative stressors and may be reduced or eliminated through the use of coping strategies. The strategies used to cope with anxiety are similar to those reported for coping with negative stress. The overlap between anxiety and negative stress has been made clear, and their synonymous use in some literature explained. However anxiety and negative stress are different and their independent use within this thesis is justified.

Niven (1992) and Sherr (1995) concluded that there was widespread acceptance that women became anxious in pregnancy, during birth and postnatally. It is also a feeling experienced by men at these times. It is speculated that if this anxiety is experienced at a low level or mildly, there may be beneficial effects for the parents, whereas if the parents experience more anxiety, they may suffer detrimental effects. The literature that reported the feelings parents experience during uncomplicated pregnancy, birth and postnatally is reviewed in the next sub-section.

2.3.4 Feelings experienced by parents

This sub-section is divided into two, with the first part related to mothers and the second part related to fathers.

When the data bases were searched for the words in the section title, it became clear that most literature focused on mothers. Because of its justifiable importance to the understanding of women's experiences, a study by Oakley (1979) is critiqued in detail. A later study by Affonso et al (1989) is critiqued and is followed by a review of literature related to the feelings experienced by fathers. There is evidence within this review of how society appears to view the father's role.

2.3.4.1 Mothers

Duvall (1977) and Sweet (1988) agree that the first and third trimesters of pregnancy are the periods that require the most adaptation by the woman and when she is likely to experience most psychological and physical stress. They suggest that in the first trimester there are feelings of elation or disappointment about the pregnancy, with uncertainty about coping abilities and concerns about physical health and relationships, particularly with the baby's father (Duvall 1977, Sweet 1988).

The second trimester, Duvall (1977) and Sweet (1988) suggest, is generally one in which the woman feels well, both physically and emotionally, is relatively free from stress and is one in which adaptation to the pregnancy status is easiest. However, if problems occur during this time, Breen (1975) suggested that a woman might experience emotional turmoil.

The third trimester brings increasing tiredness for women with impatience for completion of the pregnancy and concerns about labour and birth. In the postnatal period there are usually relief and joy, with love for the baby expressed (Duvall 1977, Sweet 1988). However, Breen (1975) concluded that some women initially express no emotion for their baby or experience anxieties about the baby's or their own health and how they will cope. The relationship with the baby's father and their abilities to parent are also of concern to these women.

Oakley (1979) explored the transition to first time motherhood of 55 women. She began with an initial period of participant observation of mothers, mothers-to-be and medical personnel, followed by in-depth interviews with a convenience sample of women, twice during their pregnancy, at 24 and 34 weeks gestation, and twice, at 5 and 24 weeks, after the birth. The study was conducted over a three-year period, in one large urban setting and women were recruited from one hospital. The women's ages ranged from 19 – 32 years and all were white and from Britain, Ireland or North America. Married women accounted for 89 per cent (%) of the sample at the

start of the study and 93% by the end of the study. The majority of the women were employed and 91% were described as middle class by their own occupation. While this sample was not representative of the whole population and the findings could not be generalised, Oakley (1979) indicated that the composition of the sample was representative of the hospital population at that time.

This type of sample has been criticised, as have similar samples in subsequent related studies, as not reflecting the full range of women, their situations, culture or experiences (Phoenix and Woollett 1991). This type of bias in a sample was thought to give a false impression of motherhood to which many women could not relate and from which inappropriate policies could be developed. Never the less, Oakley's (1979) study is pertinent to the 'study' and a summary follows.

While most of the women in Oakley's study accomplished uncomplicated pregnancies and births, they acknowledged feeling anxious at varying periods during their transition to motherhood. Initially some women had mixed feelings about the pregnancy, describing these as, for example (e.g.), anxiety yet euphoria, terror yet pleasure. The women appeared to view anxiety as a negative emotional state associated with aspects of the changes in their life due to the pregnancy. They were asked about causes of their anxiety, referred to as negative stressors. Some were anxious about the baby's health and whether the baby would have congenital abnormalities. Most doubted their ability to cope with pregnancy, to look after the baby, and motherhood in general. For most women, these negative stressors persisted through pregnancy and for some time after the baby was born, resulting in continued anxiety.

Other aspects that were viewed as negative stressors included having to give up work, the change in lifestyle, money and housing, the process of giving birth, whether there would be a stillbirth or miscarriage, and getting fat.

There did not appear to be as clear a distinction between the feelings experienced by the women Oakley (1979) recruited during the three trimesters of pregnancy as Breen (1975), had suggested.

Holding their baby immediately after birth, 30% of the women experienced pride, amazement and euphoria. However 70% of the women were not interested in their baby due to exhaustion, the effects of drugs, their discomfort or their disbelief. This lack of interest surprised or shocked them, as this was not how they had thought they would feel towards their baby. Gradually as they got to know their baby and cared for him, they reported growth of the loving feelings towards the baby that they had expected to feel (Oakley 1979).

Postnatally many of the women felt emotional deflation, an anticlimax. There was concentration on their physical discomforts and pain. Getting to know and care for the baby was a stressful and anxious time. Oakley defined anxiety as a mental health outcome and suggested it was one of the four categories of postnatal depression the women described. This classification is similar to that suggested by Powell and Enright (1990). Oakley (1979) interpreted anxiety as a more serious state for the women than postnatal blues but not as serious as depressive moods and much less problematic than postnatal depression.

When in an anxious state, the women described that they felt very sensitive, suffered insomnia and could not concentrate. The realisation that the baby was their responsibility was also anxiety provoking and was experienced most acutely on taking the baby home. Again as the women got to know their baby and as the baby got to know and respond to them, the feelings of intense anxiety lessened. Crying, illness, and lack of support from the fathers were aspects that increased their anxiety. All the women felt less anxious when a routine was established and maintained, therefore Oakley concluded that anxiety was a transitional phase in the adjustment to motherhood, lasting up to two weeks (Oakley 1979). There was no

specific reference to other coping strategies used by the women to deal with their anxiety.

In a more recent study to define and rate the intensity of negative stressors experienced during pregnancy and in the postnatal period in more detail, Affonso et al (1989) undertook a quantitative study in one urban teaching hospital in the USA. A convenience cross-sectional sample of 221 women in the first and third trimesters of pregnancy and in the postnatal period was recruited to participate in a thirty minute taped semi-structured interview. During the interview, the participants identified and rated negative stressors that they had experienced.

Although the validity and reliability of the tool was not established, it was derived from similar scales used by Holmes and Rahe (1967) and Yamamoto and Kinney (1976) and had been adapted and used in other studies (Arizmendi and Affonso 1987, Affonso et al 1988). The researchers did not recruit women in the second trimester because of the accepted view that this period was relatively stress-free. While the sample group from America was biased in terms of being white, middle class, and from one urban setting, these women had uncomplicated pregnancies and births and thus were an appropriate sample from which to determine if there were common negative stressors. The researchers were able to identify the most frequent and most intense negative stressors the women experienced.

The most frequent negative stressors were the physical symptoms, the changes in life style, body image, concerns about the pregnancy and particularly thoughts of the baby's welfare, that is (i.e.), whether the baby was normally formed, was healthy, and was developing as expected. The most intense negative stressors were thoughts of the baby's welfare, labour and birth, pregnancy, newborn behaviours and their relationship with the baby's father. The intensity of concern about the baby's welfare increased during the pregnancy. These findings supported the findings of Oakley (1979). Affonso et al (1989) recommended that health care professionals

continued to carefully assess each woman's understanding of pregnancy and childbirth in order that any unrealistic anxieties were allayed.

The interpretation of unrealistic anxieties was not given and the use of 'unrealistic' reveals a lack of understanding of the individuality of anxiety and stress. Coping strategies were not investigated and Affonso et al (1989) did not elaborate on how health professionals could allay anxiety nor how the effectiveness of these interventions could be assessed.

Having considered the feelings experienced by women, the literature related to the feelings that men experienced during their partner's or spouse's uncomplicated pregnancy, birth and postnatal period is reviewed in the next sub-section.

2.3.4.2 Fathers

In several ways the pattern of adaptation to pregnancy for fathers differs from mothers' adaptation. Duvall (1977) suggested that in the first trimester fathers, while generally welcoming the news of the pregnancy, experienced anxiety as to their ability to parent a child as well as anxiety about the health of both the mother and baby. Like the mother, fathers tended to relax and enjoy the pregnancy during the second trimester. Towards the end of pregnancy there were again anxieties about the mother and the baby's health status and the labour and birth. The baby's birth brought relief and satisfaction to the father, increased participation in family life, but also increased anxieties about his parenting abilities (Duvall 1977).

The ten developmental tasks that Duvall (1977) suggested for fathers and mothers to achieve as parents were very similar and included developing a loving and caring relationship with the child. However the differences supported the then current stereotypical picture of a wife/mother at home with the child or children and the husband/father out at work to support the family.

In the latter decades of the twentieth century, fathers have been expected to alter their role to include more involvement during pregnancy, childbirth, and in the upbringing and care of the child than was the case in previous generations. While some fathers achieved this change, others conformed to a more traditional role (Fishbein 1990, Chapman 1991, Rustia and Abbot 1993). Jordan (1990a) in a grounded theory approach, collected data from 56 fathers. Constant comparative analysis revealed that the basic developmental tasks the Duvall (1977) suggested were still relevant. However, Jordan (1990a) found that fathers had difficulty achieving these tasks in pregnancy because of anxiety about what they perceived as a conflict with their role as breadwinners, exclusion from the childbearing experience and the existence of few appropriate role models.

Connor and Denson (1990) in a review of the literature, concluded that the developmental tasks a man had to achieve for a successful transition to fatherhood, as suggested by Duvall (1977), had been supported by subsequent research. However, achievement of the tasks was related to the acceptance of the pregnancy, cultural norms and society's expectations of fathers.

As part of a longitudinal study in one English Health Region of pregnancy and childhood, attitudes to fatherhood and the involvement of fathers in practical childcare tasks were explored (Smith 1995). A sub-sample was selected via an undisclosed method from the mothers who participated in a main study. These 286 women, who formed the 1990-91 sample, nominated acquaintances until a snowball sample of a further 420 women was recruited. These women formed a sample for each of the decades from the 1950s until 1990. The researchers were unsure of the representativeness of the sample but all social classes were equally represented and 95-100% of the fathers were living with the mothers during the first year of the child's life. Data were collected by structured interview.

Apart from the lack of representativeness, there were other design factors that reduced the validity of the findings. The study reported on aspects of fatherhood but

collected the data from mothers and these women relied on recall of events from one to forty-two years previously.

The father's involvement in childcare tasks was reported by 39% of the mothers in the 1950 sample, by 52% in the 1960 sample, by 56% in the 1970 sample, and by 78% in the 1980 sample. Of mothers in the 1990-91 sample, 82% acknowledged this type of assistance.

The attitudes to fatherhood were also noted to change over the decades. Smith (1995) reported that prior to 1950, the role of the father was hardly mentioned in childcare books. However during the 1950s there was some encouragement in such literature for fathers to be involved in the practicalities of child care, even if it was just in case of an emergency. Women from the 1990-91 sample reported their expectation that the father would be involved in these tasks.

The emotional side of fathering received more attention in the 1970s and increased involvement of the father during pregnancy and birth, and developing a relationship with their child postnatally began to be stressed. The women in the 1950 sample reported a 5% attendance by the father at the birth. This percentage rose in the subsequent decades, with 10% for the 1960 sample, 35% for the 1970 sample, 90% for the 1980 sample and 97% for the 1990-91 sample attending the birth. Statistical analysis indicated a strong relationship between attendance at the birth and subsequent involvement in childcare tasks. This finding was thought indicative of the importance of the attendance at the birth and subsequent father and child bonding.

However the data from the women in the 1990-91 sample indicated that 25% of the fathers who attended the birth were pressured to do so by the mother. Of these fathers, 61% were not involved in childcare tasks. It was concluded that a father who was forced to attend a birth might not have found this experience helpful in bonding with his child.

Oakley (1979) reported that the women in her sample experienced a range of support from the fathers. Some attended the birth voluntarily, while others were urged to do so by the woman. A minority of women did not want the father to be present and generally the father respected this view. The level of childcare in which the fathers were involved varied considerably from the extreme positions where some were truly in partnership with the women, to others who did not participate. The majority of fathers tried to help with most childcare tasks.

Jackson (1984) compared published data with the data he generated in a small study of 100 first time fathers in one city in the same Health Region in which Oakley's (1979) study was undertaken. He found that fathers were at home more with their child or children than previously, mainly due to unemployment and were also more involved in childcare. However he concluded that the increased involvement these fathers had was because they wanted to have such involvement to meet their own emotional needs, rather than simply because they did not have to go out to work.

In the study reported by Smith (1995), the data indicated that 8% of women in the 1950 sample had gone back to work before their child was one year of age. The percentage of women who had gone back to work before their child was one year in the 1960 sample was 16%, in the 1970 sample was 16%, and in the 1980 sample was 47%. Of the women in the 1990-91 sample, 55% had returned to work before their child was one year of age. However, only 26% of these women indicated that the father cared for the child while she was at work. Childminders, friends and relatives, predominantly female, provided the childcare.

Moss (1995) suggested that the role of the father as the uninvolved man seen as a figure of authority, the breadwinner with a link to the outside world, was outmoded. While many fathers maintain this role, some fathers have changed so that they have become more involved, both physically and emotionally during pregnancy and then with their child or children. For others their changed role has occurred as a result of

separation from their children due to, for example, divorce. Moss (1995) suggested that other fathers were uncertain as to the nature of their role

Summary

From the literature it is evident that varying degrees of anxiety can be experienced by mothers and fathers throughout an uncomplicated pregnancy, birth and the postnatal period. The anxiety is stimulated by varying negative stressors but these are related to the adaptations to the parenting role that the individual has to make. The physical, psychological and behavioural responses to negative stressors closely follow the GAS (Selye 1950), with varying levels of anxiety reported. The strategies for coping with the anxiety during these periods were not clearly identified in the literature, but included social support particularly from the partner, getting to know the baby and positive reinforcement from the baby's reactions to the parents.

While some of the babies admitted to NNU are born at term after uncomplicated pregnancies, the most babies are admitted to NNU after complicated pregnancies or births, or are preterm. Therefore the experiences and feelings of parents whose baby requires care in the NNU were important to consider. The next chapter has a review of literature related to parents who experience the admission of their sick or preterm baby to the NNU.

Literature review

Chapter 3

Parents' feelings following their baby's admission to NNU

Introduction

In 1993, when the 'study' was being considered, there were 8898 neonatal admissions to NNUs in Scotland, accounting for 14% of the total live births (Scottish Health Service Statistics 1994). Almost since the inception of NNUs, it has been recognised that the admission of a baby to a NNU is a very difficult experience for parents, particularly if the baby is preterm. From a series of highly respected investigations, succinctly summarised by Caplan et al (1965), it was concluded that such an admission was a particularly stressful experience or even a crisis for parents.

Subsequent literature focussing on the experience of parents whose baby is admitted to a NNU, continued to consider this a crisis that usually required some crisis intervention (Harper et al 1976, Jeffcoate et al 1979 a and b, Blumberg 1980, McHaffie 1987 and 1990, Pederson 1987, Gennaro 1988, Shields-Poe and Pinelli 1997). Therefore consideration is given to crisis and crisis intervention in the first section of this chapter. However, as the theoretical framework for the 'study' was derived from crisis and crisis intervention theory and is explored further in chapter five, the discussion here is supplementary.

Because parents can also experience feelings of grief when their baby is admitted to the NNU, grief is explored in the second section of this chapter. There is consideration of the stages of grieving, pathological grief and grieving related to childbearing in sub-sections.

The final section of the chapter consists of a review of the literature related to parents' feelings and experiences during the period after their baby's admission to

NNU. For ease of reading and to emphasise the development of the knowledge base, this part of the review is presented in the chronological order of the studies, starting with the research reported in the 1960s and ending with a study reported in 1997. As parents' feelings and experiences during the period after their baby's admission to NNU is the major focus of the 'study', there is detailed description and critique of these studies.

3.1 Crisis and crisis intervention

This short section is divided into two sub-sections in which there is brief discussion of crisis and crisis intervention. The brevity is justified because a more detailed discussion forms the basis of the theoretical framework for the 'study' and is found in chapter 5.

3.1.1 Crisis

LeMasters (1967) described a crisis as sudden event with which an individual was unable to cope. Prior to a crisis, there was thought to be a level of organisation within the individual. After the crisis event happened, the individual experienced a period of disorganisation, a period of recovery and then some reorganisation.

The total impact of a crisis was thought to be dependent on its nature, the level of organisation or disorganisation when the crisis happened, any other resources the individual had at their disposal, including previous experience of a similar crisis.

Kaplan and Mason (1967) viewed crisis as the complex mixture of feelings an individual experienced when he or she tried to deal with an event for which they were not sufficiently prepared.

Murgatroyd and Woolfe (1982) developed the thinking of Caplan (1960) and agreed that individuals desire homeostasis. They suggested that a crisis is a situation in which the individual is confronted by some type of threat, and homeostasis is

disrupted and feelings of anxiety are experienced. If established problem-solving techniques do not restore homeostasis, anxiety increases and alternative problem-solving techniques are used. If these are unsuccessful, extreme anxiety is felt, the individual has no further resources to cope and psychological breakdown is possible.

Sherr (1995 p27) considered a crisis an "unanticipated circumstance", and that an individual could react to a crisis in different ways which included the physiological, psychological and behavioural signs and symptoms of stress response as described by Selye (1950) including acute anxiety. Alternatively the individual could feel terror or panic, during which there was inability to act to relieve the feelings. It was suggested that if helplessness was experienced, there could be frustration because the individual could do little to relieve the anxiety. Some individuals developed a fixation with the crisis during which they were unable to think of anything else.

3.1.2 Crisis intervention

Caplan (1960) considered crisis intervention as an important part of support for individuals in crisis, to assist with their healthy recovery from the crisis and for future emotional wellbeing. As he suggested that a crisis usually lasted only four to six weeks, intervention had to be immediately available and effective if a successful outcome was to be achieved. Sherr (1995) also stressed the importance of crisis intervention, to help reduce the depth of feelings experienced in a crisis.

Murgatroyd and Woolfe's (1982) definition of coping follows from that of Lazarus and Launier (1981). They suggested that coping referred to the way/s in which an individual tried to change or manage the excessive demands made on him/her, whether or not the outcome was successful or not. It was a dynamic process that was dependent on many individual factors, including past experience, personality, and social relationships. Individuals experiencing crisis may require assistance to deal with the crisis positively, i.e. crisis intervention.

It was acknowledged that this definition had clear overlap with the ways in which individuals cope with stressful situations. This again emphasises the interchangeable and inappropriate use of stress, crisis, and anxiety that is evident in the literature.

Summary

A crisis is a situation for which an individual is unprepared and that stimulates a complex response in the individual. The response to the crisis may include a stress response with feelings of anxiety. While an individual may try to overcome the crisis using problem-solving strategies, usually additional help is required in the form of crisis intervention. The nature of what constitutes a crisis and appropriate crisis intervention is dependent on the individual concerned.

One of the main emotions experienced by parents whose baby is admitted to NNU is grief (Hummel and Eastman 1991). Grief, as it applies particularly to these parents, was therefore an important aspect to consider and in the next section there is a review of the pertinent literature.

3.2 Grief

Grief is discussed in this section. In the first sub-section, the stages of grieving that have been proposed by several authors who are considered authorities on the subject, are explained.

There is discussion of pathological grief in the second sub-section and this is followed in the third sub-section by a discussion on aspects of grieving in relation to childbearing. Grief for the loss of the longed for baby, anticipatory grief and chronic sorrow are included.

3.2.1 Stages of grieving

There have been classic studies of death and bereavement (Freud 1917, Lindemann 1944) that have established grief as the expected, functional human response to the

experience of loss. Indeed Lindemann's (1944) detailed work with the survivors of the Coconut Grove nightclub fire in Boston in the USA, lead to further studies of death and grieving, topics that had been almost taboo until then. While loss can take many forms, e.g. the loss of a job, a possession or a pet, it is more common to think of grief as the reaction to the loss of a loved one in death. Significant contributions were made to the understanding of grieving by Bowlby (1979), who studied the effects of removing young children from a home to an institution, Parkes (1972) who explored the experiences of widows after the death of a spouse, and by Kubler-Ross (1975), whose work focused on the experiences of patients with cancer and then with their bereaved families.

Without exception, researchers agreed that grief was not a state, but involved a process of grieving, that Lindemann (1944) had suggested was an active process to be worked through using grief work. While grief was acknowledged as a series of reactions for each individual, there were common and distinctive features through a fairly predictable course (Lindemann 1944, Parkes 1972, Worden 1982). Worden (1982) like Kubler-Ross (1975) considered that the process could be ascribed both to the person who was dying and to the person who was bereaved.

While researchers have developed their individual classifications for the series of stages in the process of grieving, arguably the most well-known are the five stages proposed by Kubler-Ross (1969). She suggested that the first stage was one in which there was denial, shock and disbelief. While the signs and symptoms of physiological shock could be present, the emotional component was emphasised by Kubler-Ross (1969). This was viewed as a defence mechanism to protect the person from the reality of the death and was similar to the mechanisms suggested by Lazarus (1966) in the individual's attempt to cope with stress. Bailey and Clarke (1989) also suggested this as a constructive mechanism in relation to coping with stress.

The second stage (Kubler-Ross 1969) was partial awareness with anger and blame and possibly guilt expressed. Each of these emotions enabled the individual to gradually begin to acknowledge the death and its full meaning. Kubler-Ross included a third stage, bargaining. She gave examples of the dying person saying, for example that if he promised never to do whatever again, maybe he would live. A bereaved person can also express a form of bargaining, trying to postpone the full awareness of the death by, for example, making excuses. However as none of these strategies removed the reality of the death, this had to be faced and the individual gradually moved into a stage of despair. Bowlby (1961) termed this stage disorganisation, a stage similar to the disorganisation referred to by Caplan (1960) as part of the experience of crisis.

The fourth stage occurred when there was full realisation of the death, with resultant depression and profound sadness. The physical symptoms experienced during this phase included feelings of emptiness, gastro-intestinal upset and insomnia. The final stage was one of resolution with acceptance of the death and a continuation of life for the bereaved person. They were able to remember the dead person and the relationship with them with comfort and realism. Kubler-Ross (1969) appeared to suggest this stage occurred more passively, while Parkes (1972) concluded this was an active stage and explained the work of recovery, reorganisation and reintegration. The link to Lindemann's (1944) active grief work was evident.

A process approach can be interpreted as a linear model with progress from beginning to end within a specific time frame. This is not what should be interpreted in relation to the process of grieving. Individuals spend varying amounts of time in each stage, miss or combine stages, or return to previous stages, depending on their specific circumstances. Kubler-Ross (1969) acknowledged this and suggested that as long as the person was generally progressing through the stages to a resolution of grief, a wide spectrum of variation could be considered as functional grief (Kubler-Ross 1969).

Baker et al (1992) criticised the stage or process approach to grieving, such as those suggested by Kubler-Ross (1969) and Lindemann (1944). Baker et al's (1992) work was with bereaved children but the findings have been generalised to adults. Closer examination of Baker et al's (1992) work indicated their criticisms were not well-founded. While criticising a process or stage approach, Baker et al (1992) viewed grief as a series of tasks that had to be accomplished during specific time periods. The time periods were early phase, middle phase and late phase, phases similar to the stages of grief proposed by Kubler-Ross (1969) and Lindemann (1944). Baker et al appeared to imply that grief, as portrayed by Lindemann (1944) and Kubler-Ross (1969), was passive, whereas both these researchers suggested grief was an active process towards specific goals, indeed Lindemann used the term grief work. The tasks Baker et al suggested for each time period were similar to the goals suggested by Lindemann and Kubler-Ross.

Grief has been viewed as a part of the human experience that could result in personal growth and development (Duvall 1977, Bowlby 1979). Successful grief work that leads to resolution, could equip an individual with skills that could help him cope with future bereavements or similar crises. This view linked with those of LeMasters (1967) and Lazarus and Launier (1981) who suggested that preparation or previous experience was beneficial in coping with crises.

3.2.2 Pathological grief

Pathological grief was a term applied to any grieving process that did not conform to the wide variation of responses to grief that were considered to be part of functional grief, i.e. dysfunctional grief. Lindemann (1944) described pathological grief as a delayed beginning to grieving that was followed by a morbid grief reaction that included the altered reactions of:

- overactivity with no sense of loss
- hypochondriasis
- psychosomatic disorders
- changed relationships

- excessive hostility
- a schizophrenic picture
- withdrawal from and loss of interaction with society
- behaviours which were harmful to social and economic existence
- agitated depression.

Parkes (1972) explained features associated with interruptions to or prolongation of the process of grieving, that he termed chronic dysfunctional grief that could also include delayed grieving.

More recently it has been suggested that views of functional and dysfunctional grief should take into account the individual's history of loss and grief, the extent of their relationship with the dead person, and other circumstances impacting on the death. It has also been emphasised that assumptions about the individual's process of grieving, that could be harmful to functional grieving, should not be made. It was suggested that enabling each person to grieve in their own way was more likely to avoid dysfunctional outcomes (Bowlby 1979, Rynearson 1987, Stillbirth and Neonatal Death Society 1997).

Rynearson (1987) suggested that there were three alternative forms of dysfunctional grief. The first was a dependent syndrome in which the bereaved person was over-reliant and clung to the dead person. The second was an unexpected loss syndrome in which the initial stages of grief, denial and shock perpetuate in a prolonged withdrawn anxiety state. The third form was a conflicted grief syndrome in which the relationship with the dead person in life was ambivalent or insecure delays the onset of grieving. Consideration of these dysfunctional forms of grieving could facilitate appropriate diagnosis and interventions, resulting in functional resolution of grief (Rynearson 1987).

While parents whose baby dies can experience functional and dysfunctional grief, there are particular forms of grief associated with childbearing. These are explored in the next section.

3.2.3 Grieving in relation to childbearing

3.2.3.1 Grief for the loss of the longed-for baby

Klaus and Kennell (1976), Marshall and Cape (1982), Sammons and Lewis (1985) and Alderson (1987) agreed that newly delivered parents experienced grief for the loss of their longed-for baby. They concluded that as soon as a woman was aware of her pregnancy, she began to develop a relationship with the baby. She fantasised about the perfect baby, how he or she would look and behave. Rarely did the actual baby match the fantasy and, when the mother realised this, she felt grief for the baby she had lost (the longed-for baby), even though the baby was a fantasy. She had to resolve this grief before she could form an attachment to the baby she had actually given birth to. Klaus and Kennell (1976) concluded that fathers also experienced this form of grief, although not necessarily to the same extent.

Klaus and Kennell (1976) suggested that successful progress through the process of grieving for the loss of the longed-for baby after uncomplicated pregnancies and births is usually facilitated by normal parent/baby interaction. However interaction between parents and their preterm or sick baby can be disrupted and so negatively affect the progress of such grief (Beckey et al 1985).

3.2.3.2 Anticipatory grief

Parents, whose baby is admitted to NNU, usually have fears about whether the baby will survive (McHaffie 1987, Hummel and Eastman 1991). These parents might experience the phenomenon of anticipatory grief. This term was used by Lindemann (1944) to describe the process of grief prior to an expected death. If parents feared/expected their baby to die, their preparations for the death were likened to the process of grief after a death. McHaffie (1987) suggested that parents of babies

admitted to NNUs must resolve anticipatory grief as part of the adaptation to their baby's birth, whenever the birth occurs.

If the baby dies, anticipatory grief can be beneficial (Parkes 1975, Fulton and Gottesman 1980). These authors suggested that individuals who experience anticipatory grief, work through a grieving process after the death, and feel it is easier to cope with than the process reported by survivors who have not undergone anticipatory grief.

However, anticipatory grief can be detrimental to parents if their baby does not die as they fear/expect. If they complete the full process of anticipatory grief, they may emotionally detach from the baby and have to learn to interact with him anew. Fulton and Gottesman (1980), Klaus and Kennell (1982) and Richards (1983) concluded that if the baby did not die, there might also be disruption to parent/infant interaction that could continue for a considerable period after the birth.

In a study of anticipatory grief, Benfield et al (1976) recruited 101 mother and father pairs during a five month period from one regional referral NNU in the USA. The sample was biased in favour of white, married, middle class parents. For 40 families this was a first baby but only 15% had attended preparation for parenthood /childbirth education classes. Fewer than half of the babies were LBW, although there was representation of preterm and term babies. All babies had been transferred into the NNU for care. Each of the consenting parents completed a questionnaire on the day of discharge of the baby that occurred three to 85 days after admission. While this wide range could be considered a limitation to making comparisons between and conclusions about the parents' feelings, it did allow an understanding of the feelings of parents in the immediate period after admission through twelve weeks of NNU experience.

The questionnaire was developed from previous work undertaken by Kennell et al (1970). It was designed to generate data on attitudes, feelings and behaviours in

pregnancy, labour and birth and postnatally, including seven aspects specifically related to the assessment of anticipatory grief parents experienced after transfer of their baby. On these seven items, the parents were asked to rate themselves from zero to three and their total score indicated the level of anticipatory grief.

The results confirmed that the feelings associated with anticipatory grieving of anger, guilt, irritability, loss of appetite, preoccupations, insomnia, and sadness, were similar to those experienced in grieving that occurred after a death. Benfield et al (1976) indicated that mothers experienced significantly more anticipatory grief than fathers ($p = <0.001$), more than half of the mothers had higher scores than their husbands and only one mother and eight fathers denied experiencing anticipatory grief. Mothers experienced more anticipatory grief if they were happy about the pregnancy ($p = <0.05$), the younger they were ($p = <0.01$) and the less confident they were about caring for the baby at home ($p = <0.01$). Fathers experienced significantly more anticipatory grief if the birth was by caesarean section ($p = <0.01$), tentatively explained as due to the longer separation of the mother from the baby and the father from the mother. In this situation more responsibility was placed on the father for interaction with the baby. The level of anticipatory grief experienced by parents was not related to degree of baby's illness.

Mothers were usually isolated in the referral hospital and visited their baby immediately after their own discharge. Fathers spent considerable time travelling to visit the baby and their wife and were frustrated by hospital routines, having to go to work and worrying about the financial costs of the care for the mother and the baby. Other children were usually boarded out with family and friends.

Parents also revealed variation in their feelings, initially with anticipatory joy in pregnancy, anticipatory grief after birth and transfer, then anticipatory joy in preparation for the baby's discharge home. This variation in feelings made working through the processes of anticipatory grief and trying to establish a relationship with their baby problematic for parents. The many factors that parents encountered during their baby's stay in NNU made their experience somewhat of a roller coaster

(Aradine and Ferketich 1990, Allen 1995a). This equated with the view that the process of grieving was not linear (Kubler-Ross 1969).

The findings of Benfield et al (1976) indicated that mothers and fathers had undergone an emotional process after transfer of and separation from their baby, similar to that described by Kennell et al (1970) after a neonatal death.

Benfield et al (1976) referred to the birth of a preterm or sick baby as placing severe stress on the mother and her reaction to the stress depended on many factors. These factors included her own upbringing, cultural factors, how long she was separated from her baby, her social support network and financial considerations. There was linkage to Caplan et al's (1965) work, where Benfield et al (1976) referred to an uncomplicated pregnancy as a crisis and alluded to the fact that the complication of having a preterm or sick baby added to the crisis by imposing further negative stressors. The interventions implemented as a result of the study were designed to reduce the negative stressors, thus making the crisis easier to cope with.

As the resolution of anticipatory grief was considered important for the successful subsequent interaction of parents with the baby to whom they did give birth (Klaus and Kennell 1982), strategies were recommended by Allen (1995b) to assist NNU staff facilitate successful parental grieving. Klaus and Kennell (1982) suggested that it was important to emphasise that resolution of grief did not necessarily result in immediate positive feelings towards the baby nor the absence of anxiety or stress. Therefore parents' feelings of grief may interfere with the initial and subsequent interactions they have with their baby and negatively influence their longer term relationship and the baby's emotional development (Klaus and Kennell 1982, de Chateau 1987, Wyly 1995b).

Edwards and Allen (1988) used much of Benfield et al's (1976) work in their clear explanation of anticipatory grief related to the premature baby. They focussed

particularly on the nursing strategies that could be helpful to families to manage this type of grief.

Strategies to facilitate grieving and enhance positive parent infant interaction usually begin on admission and are intensive in the first few days of life, the former lessening and the latter sustained through the baby's stay. A meta analysis of studies undertaken to evaluate these strategies revealed that many were successful in the short-term, although the long term impact had not been sufficiently evaluated (Barrera and Rosenbaum 1992).

3.2.3.3 Chronic sorrow

Hummel and Eastman (1991) acknowledged that the birth of a preterm baby was a crisis for parents and stated this was due to their psychological unpreparedness for the birth. From their review of the literature, the main feelings they suggested the parents experienced were loss, grief, guilt, fear and anxiety. They likened this response to the feelings parents experienced when a baby died or when the baby had a permanent disability. However the latter also appeared to suffer the phenomenon of chronic sorrow, described as unending grief and sorrow. From their review of the literature on the latter, the concept of chronic sorrow was further explained. Their study was a replication of one by Fraley (1990).

A convenience sample of 103 parents of 61 prematurely born children in one mid-west state of America were recruited over an eight month period via the standard child development and follow-up service at clinics held for children of four, nine, 18 and 30 months of age. The sample consisted of 42 couples, two fathers and 17 mothers and the numbers participating at four, nine, 18 and 30 months were similar. However, it is unclear from the report whether any of the parents were recruited twice, at four and at nine months of their baby's age. The time period for recruitment of the sample made duplication of parent participation unlikely at other times. The sample was biased towards middle and upper middle socio-economic classes.

When they attended the clinic with their baby, the parents were asked to recall the time of the birth of their baby and eight potentially negatively stressful times since the birth. They were then asked to complete a questionnaire, stating the presence or absence of 27 feelings during these identified times. The questionnaire used in Fraley's (1990) study was modified. The rationale for modification was not given nor was there any indication as to the nature of the modification/s. The questionnaire was pre-tested with 10 parents of preterm babies not involved in the main study and a test-retest reliability of 88.9% was determined. The validity of the questionnaire was tested with five parents of term babies, too small a sample for statistical comparisons. However there was a difference in the responses between the parents of the term and the preterm babies that suggested sufficient validity to Hummel and Eastman (1991).

The results indicated that during the baby's initial admission to hospital, mothers and fathers had little difference between their feelings, with 10 feelings most commonly experienced. These included several fears, hope, helplessness, continually thinking about the baby, happiness, frustration, and relief. There were differences in the remaining feelings between mothers and fathers, and mothers usually reported specific feelings more often.

In the eight potentially stressful situations there were significant differences between the frequency of feelings experienced by the parents. Fathers reported feeling far fewer feelings than mothers. Further analysis of the feelings related to grief, loss and fear were compared with happier feelings. Correlations indicated that parents had higher grief, loss and fear scores during the initial hospitalisation, if the baby was transferred to another hospital, and if there was a history of abortion. Parents had higher grief, loss and fear scores during the other potentially stressful events if they had fewer pregnancies and children. Younger and less well-educated parents experienced more grief responses than older, better-educated parents.

The findings that parents of preterm babies experience grief, loss and fear during their baby's initial hospitalisation confirmed those of Fraley (1990) as well as those of authors cited in the above sections. Kaplan and Mason (1960) suggested that parents who had experienced a previous preterm birth or pregnancy failure would experience less shock and grief in a subsequent similar situation because of their preparedness. Johnson (1979) suggested the opposite view. The findings of Hummel and Eastman (1991) showed that previous experiences could have a positive or negative effect on their feelings during a subsequent experience.

Hummel and Eastman (1991) made several recommendations for neonatal nurses as well as nurses working with parents during the child's development. Only those pertinent to this thesis are reported. The emotional distress parents experienced when the baby was admitted to NNU needs to be listened to and acknowledged. Confirmation that a mismatch between the parents' feelings is often experienced can allay parental doubts. Particular work to facilitate grieving is required with younger, less well-educated parents. As previous experiences affect, but do not predict subsequent emotional responses, discussion with all parents about these events is required to help resolve grief.

Despite the conflicting evidence, Hummel and Eastman (1991) also recommended that prior to discharge, neonatal nurses prepare parents for potentially stressful situations during childhood and the reactions parents can have to them. It appears somewhat unrealistic to expect a neonatal nurse to explore the potentially stressful events that might happen during childhood with parents prior to discharge from a NNU. Discussion of events that happen to babies younger than one year might have been a more realistic recommendation.

Hummel and Eastman (1991) were reluctant to generalise from the findings of their biased sample, and concluded that they were unable to confirm that parents of preterm babies experienced chronic sorrow. They postulated that the feeling parents experienced might have been unresolved grief or a stress response triggered by a

negatively stressful situation. However, whether the feelings parents experience are chronic sorrow, unresolved grief, or a stress response, it is important that professionals working with these parents explore and facilitate as far as possible healthy resolution of the feelings.

Summary

Grief is an individual and expected response to loss, especially in relation to death. Many emotions are experienced by a grieving person. Functional grieving usually follows a series of stages, over time resulting in healthy resolution. Dysfunctional grieving does not conform to these parameters and resolution is unlikely unless functional grieving can be achieved. Achieving this usually requires assistance from others.

Parents whose baby dies can experience functional and dysfunctional grieving. However, parents can experience other forms of grief when a baby is healthy or survives an initial problematic neonatal period. Grief for the longed-for baby, anticipatory grief and chronic sorrow need to be acknowledged and facilitated to ensure healthy resolution.

Having discussed crisis, crisis intervention and grief, the studies that have explored these and other feelings parents experience when their baby is admitted to NNU will be reviewed in the next section.

3.3 Parents' feelings

The literature on the feelings of parents whose baby requires NNU care is extensive. Literature was therefore selected for review if the study included the time frame of the initial period after admission of the baby to NNU, as this was the focus of the 'study'. A chronological approach has been taken to the format of this section to emphasise how studies have followed on from each other to develop the knowledge base.

Because of the direct relevance of these studies to the focus of the 'study', this section is more detailed and longer than others in the review. The key aspects of each of the studies in this section have been summarised and are presented in table format in Appendix 3.

3.3.1 1960s

Smith et al (1969) compared the feelings of a convenience sample of 35 white middle class mothers of preterm babies with 34 matched mothers of babies born at term in one urban centre. Each mother was interviewed by one of two psychiatrists three to five days after the baby's birth about her feelings about the pregnancy and the baby. There were no significant differences found between mothers of premature (preterm) and full term babies in respect of mood, acceptance of the baby or concern about the baby. These results refuted the findings of Caplan et al (1965) who suggested that a preterm birth was a psychological crisis for the mother, although not for the mother who gave birth at term. Smith et al (1969) suggested reasons for the different findings, including their sample's higher socio-economic status, the physically normal status of the babies and the data collection by psychiatrists.

3.3.2 1970s

Choi (1972) suggested additional reasons for Smith et al's (1969) discrepant results. As the data collection was conducted by psychiatrists, Choi (1972) suggested that the psychiatrists' awareness of the study's hypotheses might have affected their method of conducting the interview, and thus introduced bias. She also suggested that conducting the interview three to five days after the birth might have been too soon for the mothers of preterm babies to have fully understood the impact of what had happened to them. However, she suggested replication of Smith et al's (1969) study using a sample from a different socio-economic group to confirm or refute the findings.

Choi's (1972) hypothesis was similar to Smith et al (1969), but differed in an essential element. She hypothesised that mothers of 'premature' babies would be more anxious and depressed in the early post natal period than mothers of 'full size' babies. Essentially she planned to assess whether or not length of gestation ('premature') was related to anxiety and depression in one sample group compared with whether weight ('full-size') was related to anxiety and depression in the other. The hypothesis therefore appeared confusing. However some of the confusion was reduced with Choi's explanation of the sample's characteristics.

Compared with Smith et al's (1969) larger sample, Choi (1972) selected a convenience sample of only 20 mothers of 'premature' babies who were matched with 20 mothers of 'full-size' babies. Choi's definition of 'premature' was a baby whose birth weight was less than 2500 grams and a 'full size' baby was one whose birth weight was more than 2500 grams. Had she then indicated that the comparisons in the study would be between 'low birth weight' and 'not low birth weight' babies, misinterpretations could have been avoided. However she continued to refer to 'premature' and 'full size babies', thus misinterpretations persisted. As the gestation of babies within the weight guidelines could be either preterm, term or post-term, direct comparison of her findings with those of Smith et al (1969) and others is difficult.

It would have been helpful if Choi had given further explanations of the demographic details of the sample to allow more appropriate interpretations and comparisons of the findings, but this was not done.

Choi had criticised Smith et al (1969) in their selection of predominately middle class women, indicated that this might have biased the findings and was one of the main reasons for her replication of Smith et al's (1969) study. However Choi failed to indicate into which socio-economic group or groupings the women in the sample she selected could be classified. The matching process also excluded

socio-economic group and no explanation of demographic details was given. These exclusions are major flaws in Choi's (1972) study.

Choi (1972) interviewed the women in their hospital room during the same time period as Smith et al (1969) using a structured interview schedule from a questionnaire originally developed by a psychiatrist. Choi (1972) defended this data collection method as being more "... personalized..." (p7), enabling the women to add to their answers to the closed questions. Considering her criticism of the potential bias of the data collectors in Smith et al's (1969) study, it was expected that Choi would have chosen a method of data collection less open to bias than the personalised one she chose.

Choi's (1972) findings supported the hypothesis, with a significantly higher level of depression and anxiety ($p = <0.02$) experienced by mothers of babies who weighed less than 2500 grams at birth than by those mothers whose baby was 'full-size'. The gestation of the babies was not revealed. The lower the birth weight, the more depressed and anxious was the mother in the 'premature' baby group ($r = 0.75$), whereas in the group of 'full-size' babies the mothers showed no such correlation. No lower or upper limits of weight were defined.

Choi caused further confusion when she reported that the younger the gestation of the baby in the 'premature' group, the more likely their mothers were to be depressed and anxious ($r = 0.72$). There was no such correlation between gestational age and depression and anxiety in the 'full-size' group of mothers.

Despite the obvious limitations, Choi (1972) unjustifiably concluded that the findings in her small study refuted those of Smith et al (1969) and supported those of Caplan et al (1965), referring again to the crisis of preterm birth. Choi appeared to justify the need for replication of Smith et al's study, especially since their findings were contrary to the popular belief at that time. However the confusion in her

terminology and the flaws in the design resulted in unreliable findings that are infrequently referred to in subsequent literature.

In a retrospective study, Harper et al (1976) evaluated the reactions of parents to visiting their baby in NNU over a long period. Harper et al (1976) gave an extremely brief literature review in their report and, while referring to the high levels of anxiety experienced by parents of preterm and the anxiety-provoking environment of the NNU, crisis was not referred to. Harper et al (1976) recruited parents of preterm and term babies whose admission to one New England NNU was longer than two weeks. There was no indication of the longest admission period and therefore it is difficult to interpret the findings and directly compare them to the findings in other studies.

A 63 item multiple choice and discussion questionnaire on social, psychological, medical and financial factors was developed by the researchers and one was sent to each parent in 91 sets of parents. Duplicate copies of the questionnaire were sent to parents of multiple births. Of the 194 questionnaires sent, 102 were returned from 58 families and 91 were amenable to analysis. An Infant Morbidity Score was determined from the baby's record, although how this was calculated was not revealed. The reliability and validity of the tools were not reported and retrospective measurement may have influenced the participants' recall and therefore the findings.

Harper et al (1976) categorised the answers into four categories. To allow quantitative analysis, three independent persons scored the discussion answers as positive or negative.

The first category was Infant Contact and the findings revealed that parents had frequent and long visits. There was 50% who visited daily and 1% who visited less frequently than once per week. More than 60% spent one to four hours visiting and 82% spent most or all of that time with their baby. Ninety percent of parents performed care-giving tasks for their baby but 41% felt anxious doing so and

mothers undertook more nurturing activities. This finding reflected societal expectations of the mother's role at that time (Duvall 1977). This finding contradicted the experience of fathers in Benfield et al's (1976) study, who assumed the 'maternal' care giving role when the mothers could not visit their baby. When the baby was held, 85% of the parents felt it made the baby feel more secure and loved.

The second category was the Nursery Environment Reaction Score. There was seven percent of the parents dissatisfied with staff and 30% had negative reactions to other babies. A fear of the equipment used on other babies was felt by 23% of parents and only 36% of the parents were reassured by the equipment used on their baby.

Parental Anxiety, the third category, was defined by Harper et al (1976) as a general concept including many unpleasant emotions, some of which were akin to grief such as denial, hopelessness, helplessness, anger, rage and guilt. Data revealed that parents were highly anxious throughout the admission. Mothers were more anxious than fathers were. The highest anxiety was experienced on learning about the baby's condition and 57% felt denial, guilt, rejection or fear at that time also. When the parents saw their baby for the first time, 44% experienced these feelings.

The fourth category was Infant Morbidity. The more seriously ill the baby was, the more anxiety was experienced ($r = 0.527$; $p = <0.001$). This was especially true of fathers. Parents still visited despite the degree of illness except in three instances when the baby was terminally ill and the parents did not return to visit. The more contact there was, the more anxious parents were ($r = 0.364$; $p = <0.001$), especially the mother. However as 44% felt the baby's care improved when they were present, they continued to place themselves in an anxiety provoking situation for the sake of their baby.

Harper et al (1976) concluded that parents wanted to visit their baby and be involved in the care in spite of the emotional burden this placed on them. Anxiety was the

main feeling investigated, yet Harper et al (1976) used a very wide definition of anxiety and could not determine whether it was visiting the baby which caused the anxiety, or the anxiety which resulted in the visiting. If anxiety was considered a 'normal' response to illness in a family, by increasing their contact with the baby, parents were actually including the baby as part of their family and therefore their anxiety could be viewed as quite appropriate. However the authors stressed the importance of NNU staff appreciating the positive correlation between increased contact with their baby and parental anxiety and reconsidering interventions to reduce the anxiety. The suggestion appeared to be that if anxiety was eliminated, parent infant interaction might be negatively affected.

Jeffcoate et al (1979a) were concerned about the suggestion that separation of preterm babies from their parents after birth interfered with the parent-child relationship to such an extent that there was subsequent abuse of the child, failure to thrive, and the 'vulnerable child syndrome'. They noted that this relationship was suggested to occur in predominately parents of low socio-economic status, those with marital problems or those who were single mothers. Jeffcoate et al (1979a) undertook their retrospective study to confirm the findings of Boyle et al (1977), that long term disturbances to the parent-child relationship after preterm birth did not occur in intact, higher socio-economic status families without social problems.

The small sample consisted of two groups. The first (preterm) group was chosen by selecting from the birth register of one English urban teaching hospital, the names of parents whose preterm baby, weighing less than 2100 grams, had been born during a one year period. The second (control) group were selected by choosing the next name on the birth register after those selected for the first group if the baby had been born between 39 and 41 weeks gestation and weighed more than 2500 grams. The rationale for this selection method was to match for possible extraneous variables. In an effort to control for confounding variables, the intention had been to match the parents, but matching appeared only to have been done initially on maternal parity. However the selection method appeared to have been successful in achieving

matched groups, as there were no significant differences in social class, ethnicity or level of education. All parents were married and their experiences of social problems were similar. The groups differed in two respects. Firstly more in the preterm group had waited longer to achieve a pregnancy. Secondly more in the preterm group had experienced poorer pregnancy outcomes previously.

The preterm group consisted of 17 mothers and 13 fathers (a 77% response rate) and the control group consisted of 17 mothers and 12 fathers (a 71% response rate).

The range of social groups and the history of significant social problems in the sample groups did not comply with the stated purpose of the study to examine intact, higher socio-economic status families, without social problems. The intention was to select the parents of preterm and term babies. It is not clear therefore why the accepted definition of term was not complied with and why weight restrictions were applied. However the sampling method did result in successfully matched samples.

Although it was not clear who undertook the interviews, one semi-structured interview was conducted with each of the parents, separately if possible, in their homes. The preterm sample participated when the baby was between 31 and 89 weeks of age and the control sample participated when the baby was between 32 and 82 weeks of age. The mean time for interview was when the baby was 52 weeks of age.

Parents were also asked to complete the Neonatal Perception Inventory (NPI) when they were interviewed. This valid and reliable tool was designed for use when a baby was one month old (Broussard and Hartner 1970), but Jeffcoate et al (1979a) justified its use in their study because the characteristics referred to applied throughout babyhood.

Descriptive analysis was undertaken. Although there was no indication of the socio-economic or social history status of the families concerned, in the preterm group, one baby had suffered non-accidental injury and one had 'failed to thrive'.

Preterm group parents saw, touched and held their babies later than the control group. More than half the preterm group parents had not held their baby by the second week. However, preterm group parents had been able to visit their baby in the NNU whenever they wanted and had participated in care-giving tasks.

All the fathers and most of the mothers had felt love for their baby within two weeks. However eight mothers in the preterm group had not felt real affection for their baby for two months. It was suggested that the length of time it took for feelings of love and affection to be felt was linked to the delay in holding their babies. The mothers in the preterm group also felt that the baby did not belong to them until the baby was discharged. This was the case for the two mothers of the babies who had been abused, both of whom also indicated that they had not felt affection for their baby until the homecoming. Accurate recall was acknowledged as a potential limitation in this study, however the differences between those parents who had formed early and late attachments to their baby were large enough to reduce the effect of this limitation. Jeffcoate et al (1979a) suggested that the retrospective nature of the data collection enabled parents to express negative feelings that they might not have felt comfortable expressing in a prospective study.

Preterm group mothers had much lower scores on the NPI than the control group parents and the preterm group fathers. There were 60% of the preterm group mothers who perceived their baby as worse than the average baby, although only 16% of the preterm fathers did so.

There were ten mothers and six fathers (60%) in the preterm group who reported feeling extreme anxiety and fear that the baby would die at the time of their baby's birth. More parents in the preterm group at the time of the interview were reluctant

to leave their baby with a babysitter and this was evidence of the persistence of the fear of death as well as of the 'vulnerable child syndrome'.

Jeffcoate et al (1979a) did not select a sample that fitted the purpose of their study. There was no differentiation between the socioeconomic status of parents in the results and the conclusions were less specific than expected. General rather than specific implications for practice were suggested, and they were similar to those suggested in studies conducted before and after Jeffcoate et al's (1979a) study (Caplan et al 1965, Benfield et al 1976, Harper et al 1976, Klaus and Kennell 1982, McHaffie 1987 and 1990, Affonso et al 1992).

In another article published earlier in the same year, Jeffcoate et al (1979b) reported on the same study, although in neither publication was this clearly stated. Although there was slight overlap of some of the findings in Jeffcoate et al (1979b), the papers focussed on different aspects of the findings.

The focus of Jeffcoate et al (1979b) was on the disruptions to parental roles after preterm birth. Mothers in the preterm group felt numb after the birth with the shock of the situation. They felt guilt that was related to not being able to give birth at term to a healthy baby nor being able to mother the baby as they expected or was expected of them by society. Their baby did not feel like their own initially and the process of loving them was a gradual one. They were also shocked at sight of their baby. The feelings that were expressed were more similar to those of grief than of anxiety. The broad definition of anxiety used by Jeffcoate et al (1979a) may have resulted in this overlap.

In contrast, the mothers in the control group experienced joy, pride and elation at the birth of their baby. The majority had felt immediate love (within the first 24 hours) for their baby and only two were mildly anxious after the birth.

Fathers in both groups were slower to form attachments to their babies, but had more positive feelings towards their babies than the mothers. At the time of the study, Jeffcoate et al (1979b) suggested that neither society nor the fathers had expectations that they would participate in baby care-giving tasks, therefore this aspect was not a problem for any of the fathers.

While interesting, these findings give no more information related to the stated purpose of the study than those given in Jeffcoate et al (1979a).

There was a brief indication in their second report (Jeffcoate et al 1979b) of the recognition of the crisis of preterm birth. While there was no direct reference to this in the first report (Jeffcoate et al 1979a), the authors did refer to the work of Kaplan and Mason (1960) when recommending that parents be given realistic information about the nature and needs of the preterm infant.

3.3.3 1980s

Blumberg (1980) gave specific attention in her literature review to the studies that established preterm birth as a crisis, and described the emotions of anxiety, depression and negative perceptions of the baby as characteristic of what was referred to as a stressful situation. It was accepted that parents of preterm babies experienced considerable negative stress. However there was no evidence to indicate if there was a relationship between the amount of negative stress experienced by mothers and the level of sickness of their baby. Blumberg (1980) recognised this as a gap in the knowledge about babies requiring care in NNUs and designed her study to generate the evidence.

Blumberg (1980) noted that previous work had focussed on one high risk group or on one high risk group versus one 'normal' group, therefore in her detailed study she included both term and preterm babies who were categorised into one of five levels of risk, from highest to none. Some of the babies were cared for in the NNU and others were cared for with their mother in the postnatal area.

All mothers whose babies were admitted to the NNU were invited to participate. Mothers whose babies were at no risk were selected at random, although how this was achieved was not explained. The 100 mothers recruited were from one maternity hospital in an east coast urban centre in the USA. The sample was biased towards women with a low socio-economic status, a poor obstetric history and from an ethnic minority group. The babies were categorised from the information in the infant records and blind re-categorisations were undertaken by an independent neonatologist. Excellent inter-rater reliability was achieved (0.96). It is unclear when the categorisations were made but they appear to have been based on the babies' status at birth. There were 35% of the babies in the highest, high and moderate risk categories and 65% in the low or no risk categories.

Mothers participated in a structured interview conducted by Blumberg (1980) once between the first and fifth postnatal day to obtain demographic and maternity data, considered independent variables. The self-completion tools were then administered while Blumberg (1980) remained with the mother. All the tools were valid and reliable.

The first tool was the Maternal Attitude to Pregnancy Instrument (MAPI) (Blau et al 1964 cited by Blumberg 1980) that consisted of a series of general rather than personal statements about pregnancy and birth. The women were asked to indicate their level of agreement with each statement. The attitude of mothers was considered an independent variable.

Secondly there was an assessment of cognitive style (field dependence or independence), an independent variable, made using initially the Children's Embedded Figures Test (CEFT) to familiarise the women with the tool, followed by an abbreviated version of the Embedded Figures Test (EFT) (Witkin et al 1971 cited by Blumberg 1980). Only the EFT scores were analysed.

In order to control for any independent effect of verbal ability on cognitive style, the Wechsler Adult Intelligence Scale for verbal intelligence was than administered. The source of this tool was not given. It was clear that field dependent women in the sample had lower verbal ability.

Next, in order to assess the pre-pregnancy (trait) and post natal (state) depression, the Depression Adjective Check Lists (DACL) (Lubin 1967 cited by Blumberg 1980) were used. The women were asked to respond verbally to 32 adjectives that described feelings, firstly in relation to how they felt at that time (state) and secondly in relation to how they felt before becoming pregnant (trait). The 32 items were scored to give possible scores of between zero and 34 for both trait and state feelings.

To assess the anxiety, State-Trait Anxiety Inventory (STAI) (Spielberger et al 1977) was then used. The women were asked to rate on a four point scale, 20 statements on each of two forms. The state form assessed anxiety at the time of administration and the trait form assessed anxiety pre-pregnancy.

Finally the NPI (Broussard and Hartner 1970) was used to assess the mothers' perceptions of their baby against the 'average' baby. Depression, anxiety and maternal perceptions of the baby were considered dependent variables.

A series of complex multiple regression analyses were conducted to determine the effect of each independent variable over the others on each dependent variable. Analysis was also undertaken to determine if the combined dependent variables could predict neonatal risk. The benefit of this latter knowledge is questionable as the opposite predictive power might be considered more helpful in clinical practice.

Blumberg (1980) determined that the sicker the baby, the more depression ($p = <0.01$), and anxiety ($p = <0.01$), the mothers experienced in the early postnatal period, and the more negative were their perceptions of their baby ($p = <0.05$).

These findings were unaffected by ethnic group or social class. The sicker babies tended to have mothers who were unmarried and at the younger or older ends of the childbearing years. Younger mothers experienced most anxiety in this sample. Mothers who had caesarean sections had more positive perceptions of their babies than mothers who had normal births. Mothers who held negative attitudes towards pregnancy and childbirth were found to have higher levels of anxiety ($p = <0.05$). As this was not related to how sick the baby was, it was suggested that this finding was related to an existing higher trait anxiety in these women. Cognitive style was not related to postnatal adjustment.

Blumberg's (1980) study aimed to "document clinical observations of increased psychological stress" (p139). With no definition of stress given, the reader has to assume that the women exhibited stress if there was evidence of depression, anxiety and negative maternal perceptions of the baby. Using stress and anxiety interchangeably in this way does little to clarify the differences between the concepts.

While Blumberg (1980) failed to give any definition of crisis, she concluded that the high levels of anxiety exhibited by the mothers of high risk babies was evidence that they experienced an acute emotional crisis after the birth, independent of their previous emotional state and mental health. She suggested there be psychological services available to women in hospital to help them cope with the crisis of the birth of a high risk baby. While anxiety was accepted as part of the emotional state experienced when in a crisis, Blumberg's conclusion did not concur with the purpose of the study or with the findings. The automatic assumptions that negative stress equated with high state anxiety and resulted in a crisis were unreasonable, given the theoretical bases for these three concepts.

Trause and Kramer (1983) accepted that the birth of a premature baby was stressful for parents, although they did not acknowledge it as a crisis. The purpose of their study was to determine what the effects of preterm birth were on each parent's needs

and feelings, their sensitivity to the needs of their partner, and their adjustment to the difficulties of having the baby home. This latter purpose was framed negatively, perhaps indicating initial bias.

A convenience sample of 38 middle class parents of 19 low risk preterm babies was compared with a convenience sample of 28 parents of 14 healthy full term babies. The parents were similar in the ranges of age, educational status and the number of years married. The only significant differences for the babies were as expected, birth weight, gestational age and days in hospital. Trause and Kramer (1983) conformed to the accepted definitions of preterm and term (see Definitions), using the terms consistently throughout their report.

Data were collected using a Parental Perception Inventory apparently designed by the researchers, the validity and reliability of which were not established. The inventory consisted of 31 items allowing a parent to rate personal wellbeing and 31 identical items for their rating of their partner's wellbeing. Completion was requested within one week of the birth and at one and seven months after discharge, when parents were asked to report for the previous two week period.

The second tool, the Parental Adjustment Scale (PAS), was only administered at one and seven months after discharge and assessed the parents' adjustment to the baby being at home. The tool consisted of 17 items associated with having a baby at home rated on a seven point scale and was adapted from one designed by Wente and Crockenberg (1976 cited by Trause and Kramer 1983). The reliability and validity of the tool was not reported.

Statistical analysis revealed that in the first week after birth significantly more parents of preterm babies than term babies cried ($p = <0.001$), felt more helpless ($p = <0.005$), were more worried about subsequent pregnancies ($p = <0.001$) and their ability to cope ($p = <0.007$), and wanted to talk with staff more ($p = <0.001$). Significantly more mothers of preterm babies than term babies felt guilty ($p<0.001$),

and were worried about losing touch with reality ($p = <0.04$). However by one month after discharge the differences were reversed and significantly more mothers of term babies than preterm babies cried ($p = <0.03$), and did not want to be left alone ($p = <0.02$). These findings confirmed those of Caplan et al (1965), Benfield et al (1976), Harper et al (1976) and Jeffcoate et al (1979 a and b).

Sensitivity to their partner's wellbeing was similar between the groups throughout the study. However the parents of preterm babies became increasingly sensitive to each other's needs over time while the parents of term babies showed an initial increase followed by a decrease in sensitivity to each other. The support offered by the father was considered very helpful to the mother's adjustment postnatally and subsequent work has confirmed the importance of social support in this way (Oakley 1992, Quick et al 1996).

There were differences between the mothers and fathers in each group. In the first week, mothers were more likely than fathers to report crying, feeling helpless, feeling worried about their ability to cope or fearing losing touch with reality.

At one month after discharge, more mothers than fathers reported thinking more about their baby, crying, wanting to be held more, feeling neglected, and wanting more time with their partner. At one and seven months after discharge, more mothers than fathers continued to report thinking more about their baby, and crying. At both these times fathers were more concerned about their partner's ability to cope than were the mothers.

Trause and Kramer (1983) concluded that mothers of preterm and full term babies had more difficulty adjusting to having the baby home than fathers, but the mothers' difficulties decreased over time whereas the fathers' remained unchanged. It was noted that Trause and Kramer (1983) used the term "distress" (p462), when referring to the varying emotions experienced by parents, but did not use the crisis or negative stress.

Gennaro (1986) justifiably criticised Harper et al's (1976) retrospective research design and the unestablished reliability and validity of the multiple choice and discussion questionnaire for parents and the Infant Morbidity Scoring system. Blumberg's (1980) sample was also criticised by Gennaro (1986), as not all the women had babies in the NNU. This criticism appears unjustified. Blumberg (1980) wanted to establish if there was any relationship between the amount of negative stress experienced by mothers and the degree of sickness of their baby. Therefore it was reasonable for Blumberg (1980) to select babies who were at no risk, i.e. those who required no NNU care, and babies of low, medium and high risk, i.c. who required care in NNUs.

Based on her criticisms, Gennaro (1986) concluded that the findings of Harper et al (1976) and Blumberg (1980) might not reflect the anxiety in mothers of preterm babies in the NNU during the initial period of hospitalisation. Therefore the focus of Gennaro's (1986) study was to understanding the anxiety in these mothers at that time.

At the time of her study, Gennaro (1986) accepted the view that that anxiety could affect an individual's cognitive functioning, including problem-solving abilities. However this relationship had not been investigated in mothers whose babies were in NNU. Using the work of Caplan (1960) and Mason (1963), Gennaro (1986) postulated that a mother with good problem-solving abilities might be able to acknowledge her anxiety, and view it as a motivating factor. Therefore she might not actually experience anxiety as acutely when her baby was admitted to NNU as might a mother with fewer problem-solving abilities. Gennaro (1986) also questioned whether a mother's past poor pregnancy outcomes or the baby's risk status could affect a mother's problem-solving abilities and her anxiety.

Gennaro (1986) selected a convenience sample of 40 mothers whose babies were in one of three NNUs in one city in the south-east of the USA. All mothers were

married and the babies were all preterm (mean gestation of 31 weeks), and weighed between 1000 and 2500 grams.

A specifically designed Demographic and Obstetric Data Profile was completed for each mother and baby from the patient records and by direct questions to the mother. Having criticised previous data collection tools, Gennaro (1986) chose three valid and reliable tools in her study.

The first was the State Scale of the STAI (Spielberger et al 1977) is a 20 item self-administered questionnaire on which respondents score their current feelings of anxiety on a four point Likert scale. The total score reflected the anxiety experienced at the time of the data collection. A rationale for not using the trait scale was omitted.

The Means-End Problem-Solving Procedure (MEPS), a valid and reliable tool developed by Platt and Spivack (1975 cited by Gennaro 1986) was described as a selection of five stories each with a beginning and an end for which the respondent had to make up a middle. The respondent was awarded a point for every point made in the 'middle' part of the story which brought the story line nearer to the end, or which demonstrated that an 'obstacle' in the story had been overcome. The scores for the final four stories were totalled to give an overall score, the first story score was regarded as a practice run and so was not included. Two psychologists and Gennaro rated the stories independently and a good inter-rater reliability of 0.89 was achieved. When there were disagreements, the three scores were averaged and the average was used for analysis.

The method used by Blumberg (1980) to categorise the degree of the baby's illness as neonatal risk, appears to have been named by Gennaro (1986) as the Neonatal Categorisation Scheme. Blumberg (1980) categorised neonatal risk from the information in the infant records and achieved an inter-rater reliability of 0.96 with an independent neonatologist, therefore Gennaro (1986) considered this a valid and

reliable tool for use in her study. However it is unclear in Blumberg (1980) and in Gennaro (1986) when the categorisations were made, although they appear to have been based on the babies' status at birth. No babies were in the low and lowest risk categories and the majority (26) were in the highest risk category. This contrasts with Blumberg's (1980) sample in which the majority of babies were at low or no risk.

Gennaro (1986) conducted one 40 minute session at the end of the first week of the baby's admission with each of the participating mothers to obtain the data, tape recording the MEPS.

All mothers were anxious, regardless of how sick their baby was, and the anxiety scores were greater than the norms given by Spielberger et al (1983). Gennaro (1986) suggested this might have been due to the lack of variability in the babies' status or to the fact that the babies were in NNU and this was anxiety provoking in itself. Having criticised Harper et al's (1976) design, Gennaro (1986) confirmed their findings that mothers experience anxiety, yet failed to include fathers as Harper et al (1976) had done. Although not discussed in detail, Harper et al (1976) included in their sample babies of varying levels of sickness and found that parents' anxiety heightened the sicker their baby was. This finding had been supported by Blumberg (1980), yet Gennaro (1986) was unable to support or refute these findings in her study in which there was a lack of variability in the babies' level of sickness.

There was no significant difference in the anxiety in relation to previous pregnancy outcomes in this sample, although Gennaro (1986) suggested caution in generalising this finding.

The level of problem-solving abilities in these mothers was equal to the norms suggested by Platt and Spivak (1975 cited by Gennaro (1986). However, mothers with higher problem-solving abilities reported significantly more anxiety than did those mothers with lower problem-solving abilities ($p = 0.0053$). Gennaro (1986) suggested that this confirmed the view that a mother with good problem-solving

abilities was more able to identify feelings and more openly express those feelings, than was a mother who had fewer problem-solving abilities.

Gennaro (1986) acknowledged the lack of control over extraneous variables such as age and parity, which may have affected the results, and the failure to collect data prior to the preterm birth with which to compare postnatal data. Because the majority of preterm births are unexpected, overcoming this latter limitation would be difficult. However, administration of the trait scale of the STAI (Spielberger et al 1983) would have offered an insight into the 'usual' anxiety of the participants, yet Gennaro (1986) gave no explanation of why this was omitted in her study. As Blumberg (1980) had suggested that the higher levels of anxiety found in her sample were related to an existing higher trait anxiety, it might have been prudent for Gennaro (1986) to have measured this variable also.

Harper et al (1976), Jeffcoate et al (1979a and b) and Blumberg (1980) all suggested that NNU staff could intervene to reduce parental anxiety after admission of their baby to NNU. However Gennaro (1986) argued that if the mother of a preterm baby was able to function well cognitively, attempts to reduce the anxiety that helped her to cope with the experience, might be detrimental. She suggested that NNU staff be educated to help mothers to channel the anxiety to further help their adaptations. These suggestions supported those of Mason (1963) and linked to the suggestion by Harper et al (1976), that some anxiety might be beneficial to parent-infant interaction.

Gennaro (1986) did not refer to the crisis of preterm birth or negative stress, although she did refer to the work of Caplan et al (1965). She focussed on anxiety as the emotional response experienced by mothers of preterm babies and referred to anxiety or heightened anxiety throughout the report.

McHaffie (1987) conducted a longitudinal study of 21 mothers, who had given birth to their first VLBW baby, to investigate their perceptions of the baby's progress

while in hospital and their readiness to take the baby home. This study was also reported in McHaffie (1990). Apart from the style and more detailed presentation of the findings, the publications are very similar. As the first publication was in 1987, the study is reviewed in this section, but both the 1989 and the 1990 publication will be referred to. The convenience sample was recruited on the fifth postnatal day from one large urban NNU in Scotland over a one year period. Four data collection tools were used. A semi-structured interview was conducted with each mother away from the NNU at six well defined times. An interview was conducted when the baby was one week of age, one month of age and the day before discharge from hospital, i.e. three times prior to discharge. An interview was conducted at one week, one month and three months after discharge, i.e. three times after discharge. No rationale was given for the times chosen, except that the purpose of the study was to investigate perceptions before and after discharge of the baby from NNU. Two interviews were tape-recorded. No rationale is given for only two recordings being made or why the interviews immediately before and after discharge were selected.

The mothers were asked to complete the NPI (Broussard and Hartner 1970) on three occasions, on the day before the baby's discharge and the following two subsequent visits, but again no rationale for choosing these occasions was given, apart from validating the interview data. The mothers were asked to record events and feelings of significance in a diary throughout the study. Apart from these data supplementing the other data collected, the diaries bridged the periods between the interviews. Demographic data were retrieved from hospital records and from the mothers.

The qualitative data were categorised and the quantitative data were subjected to descriptive analysis.

Six phases of adjustment were identified, three in hospital and three at home. Initially the mothers felt shock and fear, with anticipatory grief, and grief for the longed-for baby. These findings supported those of previous researchers (Caplan et al 1965, Benfield et al 1976, Harper et al 1976, Jeffcoate et al 1979b, Trause and

Kramer 1983, Gennaro 1986) Then there was a period of anxious waiting with depression and fluctuating emotions. The next phase was one of positive anticipation of going home but once the baby was discharged, anxiety and lack of confidence returned. These findings supported the roller coaster of feelings described by Benfield et al (1976).

There then followed a period of increasing confidence for the mothers but they were physically exhausted. Gradually the rewards of caring for the baby outweighed the anxiety and tiredness and the mothers became more confident in their abilities.

Two of the women had not felt ready to have their baby discharged. Compared with the other participants, these women had a significantly higher number of negative factors in relation to the baby, their relationships and their background ($p = 0.0014$) that were thought to have contributed to this perception. The factors were summarised as very inappropriate perceptions of their baby and difficulty establishing and maintaining relationships.

Recommendations from this study were that mothers should be encouraged to participate in the care of their babies, develop realistic perceptions of and positive interactions with their babies, and appreciate their own mothering capabilities. Individual plans should be made for discharge, taking into account the mother's readiness to take the baby home (McHaffie 1987 and 1990).

McHaffie (1987 and 1990) acknowledged the experience of preterm birth as a crisis, and reported the view that the crisis was not fully resolved until the baby was being cared for at home. This was at odds with the view of Caplan (1960) that a crisis is a short-term experience. However, the roller-coaster nature of the NNU experience for parents (Benfield et al 1976, Aradine and Ferketich 1990, Allen 1995a) might result in the crisis recurring at times during the baby's stay in the NNU and McHaffie's (1987 and 1990) findings would support this explanation.

Pederson et al (1987) accepted that the admission of a baby to the NNU was a very stressful experience and referred to it as an "impending catastrophe" (p 15). They contrasted the views of Caplan et al (1965) with those of Klaus and Kennell (1982). Caplan et al (1965) suggested that the source of stress resulting in the crisis was the fact that the mother had to make personal adjustments to cope, focusing initially on herself rather than the baby. Whereas Klaus and Kennell (1982) suggested that because of changes in the intervening years since the 1960s, in the NNU environment and the welcoming of parent participation in care, the sources of stress in this crisis were related to their concerns about the baby.

The importance of social emotional support for mothers experiencing the admission of their baby to NNU was highlighted by Pederson et al (1987). Their study was designed to describe the stress experienced by mothers of babies in NNU, describe their sources of support and relate these to the degree of illness of the baby.

Pederson et al (1987) recruited a convenience sample of 130 mothers of 144 preterm babies admitted to two NNUs in one urban Canadian centre. The degree of illness of the babies was established on a daily basis using an infant morbidity score. The scores were averaged at the end of the baby's stay, giving an overall rating. Approximately half of the babies were classified as well and half as ill.

A structured one hour investigator-developed interview was conducted just prior to the baby's discharge by a registered nurse who was part of the research team. The interview focussed on 10 areas with three related to stress indicators, four related to differences in feelings between those expected with full term birth and those experienced, and three related to concerns over baby's survival and caring for baby at home. The interviewer also asked about the mother's perceptions of social support and then rated these on a seven point scale. Another researcher selected 45 interview schedules, although the selection method is unclear, and re-rated the perceptions of social support. Inter-rater reliability was given as 90%.

Inferential statistical tests, t-test, chi-square and correlation, were undertaken but the statistical findings were incomplete in the report. The reported results indicated that having a baby admitted to the NNU was emotionally stressful for mothers even if the baby was well. The mothers were more concerned about the baby than themselves ($p = <0.001$), a finding that supported the view of Klaus and Kennell (1982). Major social support was provided by the husband, the mother's parents and the church (for church members) and mothers of ill babies felt they were more supported than did the mothers of well babies. However, significance was reached only in relation to support from the mother's parents ($p = <0.05$). The level of stress was independent of the social support the mother perceived.

Pederson et al (1987) reported correlations in respect of the degree of illness of the baby, and the stress and social support the mother perceived ($r = 0.53$ to 0.83). There were also relationships reported between gestational age, birth weight and length of hospitalisation and stress and social support. However no correlation values were given and the nature of the relationship was unclear from the report.

Despite recruiting only mothers to the study, Pederson et al (1987), recommended that NNU staff shared information with parents about the care of their baby as well as encouraging them to participate in the care. Emotional support from within the parent's social network could then be facilitated.

Pederson et al (1987) confirmed that the birth of a preterm baby is very stressful, and concurred with the view of Klaus and Kennell (1982) that in the crisis, the mother focussed on the needs of her baby. This focus might have reduced the mother's abilities to cope with the crisis effectively, and thus prolonged the experience more than the suggested time period (Caplan 1960). This focus may also have allowed the crisis to recur during the baby's stay in NNU and possibly also once the baby was discharged, as Trause and Kramer (1983) and McHaffie (1987) had reported. Pederson et al's (1987) recommendations appeared to focus on

supportive measures for the parents that might enable additional external negative stressors, and therefore the crisis, to be reduced.

Gennaro (1988) followed up from her previous work (Gennaro1986) when she investigated only mothers of preterm babies and their anxiety related to problem-solving abilities. In her review of the literature, Gennaro (1988) concluded that the research on anxiety and depression in mothers of preterm babies and term babies were contradictory and inconclusive. She therefore investigated the anxiety and depression in a convenience sample of 41 mothers of preterm babies well matched with 41 mothers of term babies. The site of the study was not reported.

Data were collected at one week postnatally and weekly thereafter for a further 6 weeks. The tools used included the Neonatal Risk Categorization Schema (NRCS), renamed from Blumberg's (1980) system of neonatal categorisation, that Gennaro had used in her previous study (Gennaro 1986), with a 0.96 inter-rater reliability reported between two observers undertaking the categorisation. Gennaro also chose to repeat her use of the valid and reliable State Scale of the State-Trait Anxiety Inventory (Spielberger et al 1977), with no rational for avoidance of the trait scale.

The DACL were used to assess depression. Gennaro (1988) suggested that while the validity and reliability of the DACL were established with several populations, including with pregnant women, the tool had not been used with women in the postnatal period, but she was convinced of its suitability. However the DACL were administered to mothers of preterm and term babies by Blumberg (1980). Since Gennaro had criticised this study, it was expected that she would have been aware of the use of the tool with women in the postnatal period. While possibly a typographic error, it was confusing that Gennaro (1988) reported the normative scores for the DACL as a mean 'anxiety' score.

The NRCS was administered during the first postnatal week, as were the other two tools. These latter two tools were also mailed to the mothers thereafter at weekly

intervals. Gennaro (1988) indicated in the discussion section of the report, that qualitative data were collected in weeks four and five, but there was no indication as to how or by whom these data were collected.

There was a very low completion rate in the study (32%), with only 16 of the mothers of preterm babies and 10 of the mothers of term babies completing the data collection after the first week. This was explained by the frequency of data collection. Recognising Gennaro's knowledge of the research process and her understanding of postnatal women, especially those with a baby in NNU, such an intensive data collection strategy appears to have been overly optimistic. A pilot study may have alerted Gennaro to this limitation.

Gennaro (1988) did compare the characteristics of the mothers and babies of those who were lost to the study and those who completed the study. There were no significant differences and Gennaro was satisfied that there was no systematic sample bias.

Mothers of preterm babies were significantly more anxious and depressed than mothers of term babies ($p = 0.02$) in the first postnatal week. These findings supported those of Jeffcoate et al (1979a), Blumberg (1980) and Trause and Kramer (1983). However there were no significant differences anxiety and depression in the first week when mothers were grouped according to the degree of illness of the baby. These findings supported those of Gennaro (1986), albeit in a study in which only mothers of preterm babies were recruited. However the findings contradict those, in relation to anxiety, of Harper et al (1976) and Blumberg (1980).

There was no significant difference between mothers of preterm babies and term babies and the anxiety and depression experienced from the second to the seventh week. This finding contradicted that of Jeffcoate et al (1979a) who determined that anxiety persisted over time for the parents of preterm babies.

Gennaro (1988) found that parity and type of delivery had no influence on depression or anxiety, findings that confirmed those of Gennaro (1986), yet contradicted the findings of Blumberg (1980), who found variations related to delivery type.

About 1 month after the birth, mothers expressed negative comments due to the absence of family support persons, sleeplessness and adjustments to their new role. This finding supported that of McHaffie (1987 and 1990) that social support was important to mothers, especially in the period of adjustment after a birth (McHaffie 1987 and 1990) and was a significant finding, in light of more recent work (Oakley 1992, Quick et al 1996).

A methodological limitation noted by Gennaro (1988) was that there were no normative data available for either the STAI or the DACL in relation to postnatal women to allow appropriate comparisons. It was noted that the sample mothers' anxiety and depression were not significantly different from the normative data from college students used by Spielberger et al (1983) to generate normative data.

Based on her findings, Gennaro (1988) recommended that all mothers be given anticipatory guidance about the emotional and physical adjustment after the birth of their baby. With no rationale given for the recommendation, the reader was left to assume that preparation of mothers in this way would be beneficial to their adjustment. However this assumption was similar to recommendations made by Lazarus (1966), Kaplan and Mason (1967), LeMasters (1967), that preparation might help an individual better cope with a stressful situation or crisis. Therefore it was helpful in formulating the research questions for the 'study'.

Unlike in her previous study (Gennaro 1986), in this study Gennaro (1988) initially referred to the situational crisis of preterm birth. Crisis was not mentioned again in the report, with only the feelings of anxiety and depression referred to. Gennaro

(1988) did conclude that mothers of preterm babies experience "higher anxiety and depression" (p 84).

3.3.4 1990s

Continuing a series of studies of low birth weight (LBW) babies and their mothers, Gennaro et al (1990) undertook a study to identify if there were differences between the anxiety and depression experienced by mothers of LBW and VLBW babies. A convenience sample of 35 mothers of LBW babies and 27 mothers of VLBW babies were selected from an urban centre in the USA and were described as being very similar in relation to age, marital status, level of education, type of delivery and the babies' gender. As expected, the VLBW babies had a higher morbidity score in the first week.

To collect data, Gennaro et al (1990) used the Multiple Affect Adjective Check List-Revised-State Form (MAACL-R) (Zuckerman and Lubin 1988 cited by Gennaro et al 1990) and the Neonatal Morbidity Score (NMS) (Minde et al 1983). The MAACL-R is a questionnaire that measures self-reported moods and has established reliability and validity. Mothers were asked in person by the researchers to complete the MAACL-R during the first week of the baby's life in hospital and at home at three months corrected age. There were six other times, after the first week until the baby was five months corrected age, at which times data were collected by telephone completion of the MAACL-R.

To assess neonatal morbidity during the first week, the NMS was used at three and seven days of life and the scores averaged. The NMS is a checklist of 20 common neonatal conditions, with the severity of each rated on a three point scale. Gennaro and a neonatologist achieved a satisfactory inter-rater reliability of 0.85 when using the NMS.

During the week after delivery all mothers experienced their greatest anxiety, significantly higher than the norms for the MAACL-R. This finding supported those

of Jeffcoate et al (1979a) and Trause and Kramer (1983). The VLBW babies were significantly more sick than the LBW babies and initially their mothers experienced higher levels of anxiety and depression than did the mothers of the LBW babies, supporting the findings of Blumberg (1980). However in both groups there was no correlation between the mothers who had the sickest babies and the highest levels of anxiety and depression. By three to four months adjusted age, the mothers of the LBW babies became more depressed and anxious than the mothers of the VLBW babies. Gennaro et al (1990) suggested that the higher levels of anxiety and depression in the mothers of VLBW babies initially could have prepared them to cope better with the developmental changes the baby made around three to four months of age. The mothers of LBW babies were not so anxious or depressed initially and so coped less well with additional negative stressors when the baby was three to four months of age. This finding was similar to the rationale given by Trause and Kramer (1983) who had found that in the first week after birth mothers of preterm babies had been more anxious. However, by one month after discharge, this situation was reversed and more mothers of term babies were more anxious than were mothers of preterm babies.

It was noted that after the first week, none of the anxiety and depression scores were significantly higher than the norms. However Gennaro et al (1990) warned that statistical significance was different from clinical significance and it was recommended that neonatal staff assessed each woman's emotional health individually and responded to her needs.

Unlike in previous work where only the emotions were referred to, in this study Gennaro et al (1990) referred to the emotions of anxiety and depression as stress responses and discussed the effects of maternal stress and the impact of the "psychological stress responses" (p 104). Crisis was not referred to in the report although there were references to high levels of stress, anxiety and depression. This format was repeated in a subsequent study (Gennaro and Stringer 1991).

Continuing her research in this area, Gennaro worked with Stringer (Gennaro and Stringer 1991) to investigate whether there was a relationship between the mother's anxiety and the time of the baby's discharge, or his growth and development in the first year. A convenience sample of 63 mothers of LBW and VLBW babies was recruited from one urban centre in the USA. The MAACL-R tool that Gennaro had used in previous work (Gennaro 1986 and 1988, Gennaro et al 1990) was again used and the findings supported the previous findings that all the mothers experienced anxiety in the first week of the baby's admission.
Data from the baby's medical records indicated no significant relationships between the mother's anxiety and the time of the baby's discharge, or his growth and development in the first year. However, it was found that the mothers who experienced the highest level of anxiety in the first week, made most frequent use of the acute care services.

Shields-Poe and Pinelli (1997) concurred with the view that the birth of a sick baby was a very stressful experience that constituted a crisis for parents and could interfere with the interactions parents had with their baby. They speculated that if NNU staff intervened to reduce the stress and anxiety, parents might form a more positive relationship with their baby. They summarised the existing knowledge base on parental stressors in a clear and succinct manner. However Shields-Poe and Pinelli (1997) found little in the literature that identified the stressors that could predict, relieve, increase or were related to parental stressors. Therefore they designed their study to investigate these factors. Although the focus of the study was on parental stressors, the theoretical framework on which Shields-Poe and Pinelli (1997) based their study was that specific variables could influence the parental response to the experience of NNU and/or could affect their general feelings of stress and anxiety. Therefore the critique of this study is included in this section and simply referred to in chapter 4 of the literature review, in which negative stressors are discussed.

The specific variables that could influence parents were conceptualised by Shields-Poe and Pinelli (1997) from those identified from the literature. The first was the parents' background, including demographics and past experiences. Secondly were the situational variables including the type of hospital in which the NNU was located. Thirdly were the variables related to the baby, such as any anomalies he might have. Fourthly were the parents' perceptions of how ill the baby was. Lastly was the possible influence of any concurrent life events. Factors in the NNU that could have an influence were conceptualised as the sights and sounds, the baby's appearance, staff communication, and parent-baby interaction.

Using a descriptive correlation design, Shields-Poe and Pinelli (1997) selected a random sample of babies from three weight group strata in two urban Canadian centres. One centre was a 'neonatal unit' in a paediatric hospital caring for babies transferred in from other hospitals in which they had been born. The other was the 'perinatal unit' to which mothers had been transferred prior to the birth of their baby. The babies also represented varying levels of illness, although the babies in the neonatal unit were significantly sicker ($p = 0.02$).

A power calculation for sample size was undertaken that indicated that a sample size of 209 parents was required. A 63% response rate from the parents invited to participate gave an acceptable sample size of 212 parents. However there was a higher refusal rate noted in parents whose baby weighed less than 1500 grams at birth, resulting in a sample slightly more biased towards larger and more mature babies. While the sample appeared relatively homogeneous, more parents had incomes in the higher income ranges than in the lower ranges.

Data collection involved six tools, the first four of which were completed by the parents. The first tool was the Parental Stressor Scale for use in Neonatal Intensive Care Units (PSS:NICU) (Miles et al 1993), that assessed the stressors that parents perceived as causing them stress, divided into the four dimensions of interaction

with the baby, the baby's appearance, the sights and sounds of the NNU and staff behaviour and communication.

The second tool was the STAI (Spielberger et al 1977). The third tool parents were asked to complete was the Life Events Scale (Holmes and Rahe 1967) that indicated the number of stressful situations experienced in the previous year. These three tools had established reliability and validity. The fourth tool was an investigator developed Parent Questionnaire that elicited demographic data, current and past experience of preterm birth, perceptions of their social support, and perceptions of the baby's degree of illness. The tool was pre-tested, although the validity and reliability were not reported.

The other two tools were completed by a neonatal nurse who was part of the research team. The Neonatal Morbidity Scale determined the degree of illness of the baby based on his score related to whether he had any of 22 clinical conditions rated zero if they were not present, to three if they were life threatening. The score was calculated retrospectively on the day of data collection with the parents from the baby's records. The calculation of the overall score was calculated from the daily score and the number of days the baby was in the NNU. Good inter-rater reliability was reported as 92.9% after a training period, although it is unclear who provided the training or who acted as the other rater. The final tool was an investigator developed Baby Data Sheet that enabled demographic data to be recorded.

Data collection from the parents was undertaken in a single, 45 minute session conducted before the baby was transferred from the NNU or by three weeks after the birth if the baby remained an in-patient, i.e. between two to 21 days after birth.

Detailed inferential testing of the data was conducted. Only the findings related to the parental feelings are reported in this section. The results indicated that the trait anxiety scores were similar to the normative data (Spielberger et al 1983). The majority of parents had social support that was helpful to them. The social support

referred to by Shields-Poe and Pinelli (1997) was in relation to the individuals who gave the support rather that the nature of the support, of which there was no description. When asked about the helpfulness of social support, parents reported that health professionals gave the least amount of helpful support, while spouses, families, and friends offered more.

To determine the variable/s that contributed most to negative stress in the PSS: NICU score, regression analyses of the independent variables and the stress scores were undertaken. Two variables were identified. The first variable that contributed most to negative stress was a high trait anxiety in mothers ($p = 0.02$), although there was no significant relationship found in relation to fathers for this variable. The second variable that contributed most to negative stress, found to be significant with both fathers and mothers, was a high perceived morbidity score, in mothers ($p = 0.001$) and in fathers ($p = 0.006$), i.e. how sick the parents perceived their baby to be.

Further regression analyses of the independent variables and the stress scores in each of the four dimensions were undertaken. The factors that indicated significant relationships in each of the dimensions were reported as follows.

In the interaction with the baby dimension, mothers who had a high trait anxiety ($p = 0.03$), who perceived the baby as being sick ($p = 0.003$), who were older ($p = 0.05$), and who saw the baby for the first time in the NNU ($p = 0.005$) had higher PSS: NICU scores. Fathers had higher PSS: NICU scores if they perceived the baby as being sick ($p = 0.0008$), and if they attended religious services occasionally ($p = 0.04$).

The perceived morbidity of the baby was also significantly related to higher PSS:NICU scores in the dimension of the baby's appearance for mothers ($p = 0.003$), as was single status ($p = 0.02$). A significant relationship in this dimension for fathers was found if the pregnancy had been unwanted ($p = 0.01$), and

if there was a discrepancy between the baby's actual level of sickness and the father's perception of how sick the baby was.

In the dimension of sights and sounds, lower PSS: NICU scores for mothers were associated with the 'perinatal unit', with a well baby, and with a wanted pregnancy. However the latter was the only relationship reaching statistical significance ($p = 0.02$). For fathers, higher scores were associated with higher trait anxiety ($p = 0.03$), and seeing the baby in NNU within the first 24 hours ($p = 0.04$). Lower scores for the father were associated with interaction with a social worker ($p = 0.04$).

The fourth dimension is staff behaviour and communication. Lower PSS: NICU scores for mothers were related to high trait anxiety ($p = 0.02$), and perceiving that their baby was sick ($p = 0.02$). For fathers, PSS: NICU scores were higher the sicker the father perceived the baby to be ($p = 0.009$), if the pregnancy was unwanted ($p = 0.01$) and the longer the baby had been in the NNU ($p = 0.01$).

When the data for the STAI were analysed, both fathers and mothers indicated higher state anxiety than the normative data (Spielberger et al 1983), and mothers had significantly higher scores than fathers ($p = 0.001$). In mothers, higher state anxiety was significantly associated with high trait anxiety ($p = 0.0001$), higher levels of education ($p = 0.03$), and higher PSS: NICU scores ($p = 0.0002$).

Fathers' higher state anxiety was significantly associated with higher trait anxiety ($p = 0.0001$), perceiving the baby to be sick ($p = 0.002$), and higher PSS: NICU scores ($p = 0.01$).

Scores on the life events scale were not significantly associated with PSS: NICU scores or state anxiety, indicating that stress experienced by these parents was not affected by other life events that were usually anxiety provoking (Holmes and Rahe 1967).

The perceived morbidity of the baby was the most powerful variable that contributed to the stress parents experienced. If the baby was actually sick ($p = 0.0001$), had a malformation ($p = 0.003$), or was cared for in the 'neonatal unit' ($p = 0.03$), parents gave a higher rating to the baby's degree of illness. The higher the education level of the mother, the more seriously she perceived the baby's illness to be ($p = 0.004$). The mother rated the baby's illness less serious the longer the baby had been in the NNU ($p = 0.04$).

Shields-Poe and Pinelli (1997) identified variables that could predict the level of stress parents might experience if their baby was admitted to a NNU. Based on their findings, Shields-Poe and Pinelli (1997) suggested that by reducing or eliminating the variables that were considered negatively stressful, the negative stress parents experienced might be reduced or eliminated. Elimination of parental stress was contradictory to the suggestions of Mason (1963) and Harper et al (1976) who considered that some stress was beneficial to coping with the situation of having a baby admitted to the NNU.

The recommendations made by Shields-Poe and Pinelli (1997) included enabling parents to see and touch their baby in the delivery room or before transfer, or at least reducing the length of time between the birth and when the mother saw her baby for the first time. Preparing parents by discussion with them about NNU and allowing them to visit the NNU prior to the birth or at least giving them the opportunity to read about NNU care. Clear, honest and continuing information about the baby's condition and his care could help clarify realistic perceptions of the baby's morbidity. Inclusion of an explanation of what the baby's appearance might be given to parents before they saw the baby might also help reduce the stress of this experience.

These recommendations were particularly helpful in confirming the basis of the 'study'.

Summary

A chronological approach was taken in the review of the literature related to parents' feelings after the admission of their baby to the NNU to illustrate how the knowledge base has developed. Most of the studies involved mothers, although some researchers did recruit fathers also. While many researchers recruited only the parent/s of preterm babies, others recruited the parent/s of term babies for comparison.

The research methods used in the studies were predominately quantitative, although three of the studies (Choi 1972, Jeffcoate et al 1979b, McHaffie 1987 and 1990) included qualitative aspects in the design. A variety of tools were used appropriately to collect data, with for example, Gennaro using one tool in several studies with different samples. The NPI, the STAI and the PSS:NICU were used by several of the researchers.

All researchers reported that all parents were anxious when their baby was admitted to the NNU and that mothers experienced more anxiety than fathers. Mothers experienced anxiety at specific times during their baby's stay in the NNU, particularly on admission and around discharge. Contradictory findings were reported in relation to the anxiety experienced by mothers of preterm and term babies, the time periods the feelings of anxiety persisted after the birth, and the relationships between and anxiety and the degree of illness of the baby. Mothers with higher trait anxiety scores had higher stress scores when their baby was in NNU.

The use of the words crisis, stress, and anxiety and depression has varied in the literature reviewed. Precise definitions of the words were not given and in some, they appeared to be used interchangeably.

Most of the researchers of parental stress have recommended that NNU staff intervene to reduce the anxiety and distress parents experience, especially in the first

days after the baby's admission to NNU. Many of the interventions NNU staff implement with parents are therefore focussed on reducing the negative stressors parents in NNU experience. However, other researchers have suggested that channelling the inevitable feelings of anxiety parents have might improve the way parents cope with the situation. These two strategies require to be tested.

However for this "study" it is important to consider the causes of parental anxiety and stress, i.e. the stressors. Therefore in the next chapter, there is a review of studies that investigated the stressors parents in NNUs experienced, as well as relevant aspects of preparation for such experiences.

Literature review

Chapter 4

External influences on the parents' experience

Introduction

Two main external influences on the parents' experience of NNU are included in this chapter and are discussed in separate sections. The first section focuses on the stressors parents may experience in NNU. This section is divided into four sub-sections, each devoted to a category of stressor.

The second section includes a general discussion of the preparation for potentially stressful events that might provoke anxiety or crisis. There is focus on primary crisis prevention in four sub-sections, with consideration of preoperative preparation, antenatal care, preparation for parenthood classes and preparation for related unpredictable events.

The third section of the chapter focuses on the preparation of parents for the admission of their baby to NNU. There is review of the literature related to the prenatal visit to the NNU in the first sub-section, and of the prenatal information about NNU given to parents in the second sub-section.

4.1 Stressors experienced by parents of babies in NNU

Introduction

The authors of the studies in this review used a variety of terms to suggest that factors were negative stressors, for example, shocking, distressing, frustrating,

anxiety provoking, difficult and challenging. However for ease of reading this section, only the word 'stressors' will be used when referring to factors that resulted in stress, and there will be differentiation between negative and positive stressors. Negative stressors induce negative stress, resulting in feelings of anxiety.

An initial reading of the literature indicated that the main stressors experienced by parents of babies in NNU could be categorised as follows:

- the baby's appearance, behaviour and degree of illness
- separation, inability to freely visit and care for the baby, and alteration in parental role
- environmental stressors
- interaction with staff.

These four categories form the structure for this section of the review, and are used as sub-section headings. The studies did not confine their focus to individual categories of stressors, therefore most studies were included under most headings. Several of the studies have been critiqued in previous chapters, therefore only the pertinent findings will be included in this section. The remaining studies are critiqued in this section and the reader will be guided to the critique when the study is first referred to.

4.1.1 The baby's appearance, behaviour and degree of illness

As part of the classic studies of the crisis of preterm birth by Caplan et al (1965), Kaplan and Mason (1960) reported that one of the factors that increased the shock parents felt was the appearance of the preterm baby. This finding has been supported in subsequent studies. Harper et al (1976) found that the initial sight of their baby was anxiety provoking for parents and some parents found the sight of other babies distressing. Blumberg (1980) reported that the mothers of babies born vaginally, whether preterm or term, had more negative perceptions of their baby than mothers who gave birth by caesarean section had of their babies. Blumberg

attributed this to the fact that the heads of babies born by caesarean section presented a more acceptable image to the mother than if the baby were born vaginally. The physiological moulding of the fetal skull that occurs during a vaginal birth was perceived by the women as being a negative factor.

McHaffie (1987 and 1990) also found that the appearance of the baby could be negatively stressful for the mother. She presented a graphic quotation from one of the mothers recruited to her Scottish study to succinctly represent the views of several of the participants. McHaffie (1987 and 1990) used illustrative quotations throughout her report. Some of the participating women spoke in what is described as a broad regional accent and their words were exactly quoted, resulting in possible interpretation difficulties for non-Scots. To preclude such difficulties, yet to illustrate the depth of feeling, an explanation is given of what the following quotation means. This young mother indicated that because her baby did not look like a baby, cuddly and round, she did not like her, and did not think her beautiful or nice.

> "She didnae look like a baby and I didnae like her. I didnae think she was beautiful ... she's no' nice. She's no' cuddly and round and she's no' like a real baby" (McHaffie 1987 p8).

The findings of more recent studies, critiqued later in this section, confirmed that the baby's appearance and condition continued to be stressful to parents. In the study by Miles (1989), these were the most stressful aspects for parents (critiqued in section 4.1.3). Affonso et al (1992) identified the small size and appearance as negative stressors for parents (critiqued in section 4.1.2).

Brunssen and Miles (1996) determined that mothers found the baby's appearance and behaviour to be the most negatively stressful aspect for them, along with aspects of their role alteration. Seeing the baby in pain or having difficulty with breathing were very stressful. Brunssen and Miles (1996) conducted regression analyses to determine the most significant contributors to the Parental Stress Scale:Hospitalised Infant (PSS:HI) scores (critiqued in section 4.1.2). In relation to the infant

appearance and behaviour dimension, the scores were higher, i.e. the mother experienced more stress, the more worried she was, the more satisfied she was with her social support and the more severely ill she perceived the baby to be ($p = <0.01$). The nature of the mothers' social support was not explained. While the maternal stress score could be predicted by the mother's perceptions of her baby's illness, it could not be predicted by the actual severity of the baby's condition.

Shields-Poe and Pinelli (1997) found that fewer mothers, whose baby was in the 'neonatal unit', were prepared for the appearance of their preterm baby and found it more negatively stressful than mothers in the 'perinatal unit'. There was no such difference for fathers. In a study conducted three years after the admission of the baby to the NNU, Wereszczak et al (1997) found that the size, behaviour and appearance of the baby were distressing, as were seeing the pain and the procedures the baby endured (critiqued in section 4.1.2).

4.1.2 Separation, inability to freely visit and care for the baby, and alteration in parental role

Separation, physical and psychological, of the parents from the baby is usually a feature of admission to the NNU that is negatively stressful (Wyly 1995a).

Physically, NNUs are usually located away from where the mother is being cared for, along a corridor, on a different floor, or even in a different hospital many miles away. This physical separation is aggravated by the fact that the baby might be nursed in an incubator, another barrier to parental access (Wyly 1995a).

Psychological separation is closely linked to physical separation, but is also related to the degree to which the parents felt the baby is 'theirs'. Usually the baby requires the skilled care of neonatologists and neonatal midwives and nurses, with the parents playing only a subsidiary role in the baby's care until the baby is discharged home. Therefore for parents, their baby does not become 'theirs' until discharge (McHaffie 1987).

Physical and psychological separation can be aggravated by the parental visiting policy in NNUs. When NNUs were first developed parents were allowed little if any contact with their baby until discharge (Thornes 1985, Wyly 1995a). If parents are unable to visit, they are also unable to learn to care for and get to know their baby emotionally. Klaus and Kennell (1976) highlighted the potentially negative effects of separation of the mother and infant and this provided an impetus for change. NNUs began to allow parents to visit their baby with increasing freedom and flexibility, and parents have also been increasingly encouraged to be actively involved with the care of their baby (Thornes 1985). Gradually the rights of parents regarding their baby were accepted, as was the necessity for NNU staff to become partners with the parents in the baby's care (Morris 1994).

The studies by Benfield et al (1976), Harper et al (1976) and Jeffcoate et al (1979a) indicated that visiting policies and involvement of parents in the care of their baby were perceived as stressors in varying ways. Benfield et al (1976) reported that mothers of preterm and term babies in NNU experienced more negative feelings when they were unable to give care to their baby or hold him, and fathers were frustrated by the inflexible visiting policies of NNUs and postnatal wards.

The unit in which Harper et al (1976) undertook their study of term and preterm babies had a very liberal visiting policy and parents were encouraged to participate in their baby's care. The majority of parents visited regularly and frequently, spending long periods of time with their baby and providing care. However the longer the parents spent with their baby and the more they were involved with the care, the more anxious they were ($r = 0.527$ $p = <0.001$). This moderately positive correlation was stronger for mothers than fathers. Despite the increased anxiety, only 1% of parents would have liked to visit less often.

Jeffcoate et al (1979a) reported that the delay in holding and touching their baby was distressing for parents of preterm babies.

The assertion that preterm birth and the admission of a baby to the NNU are stressful situations that can predispose to crisis was made by Affonso et al (1992). The fear for the baby's survival, the medical condition of the baby and prolonged separation from the baby had been consistently reported by earlier researchers and were generally accepted as negative stressors for parents. While many other stressors had been suggested, the frequency and intensity of the stressors had not been established. Therefore Affonso et al (1992) conducted a quantitative pilot study to determine the frequency and intensity of positive and negative stressors experienced by mothers of preterm babies in NNUs.

The initial convenience sample of 36 predominately white, married and well-educated women was selected in one San Francisco NNU. The researchers considered that previous studies to determine parental stressors were flawed by the retrospective nature of data collection where there had been reliance on the parents' recall of their feelings, which could vary or be biased. To try to overcome this limitation, their prospective study was designed to collect data via structured interview at what Affonso et al (1992) considered as critical times. These times were within 96 hours of admission, between the second and third week of life, between the fifth and sixth week of life or at discharge/transfer from the intensive care area, and during the week prior to discharge home. Data were collected by three NNU nurses who were co-investigators and were given instruction about interviewing before and during the data collection phase to ensure consistency.

During the interview, the participants were asked to identify and rate the stressors they had experienced from one to 100, the higher ratings reflected more intense stress. Although the validity and reliability of the tool was not established, it was derived from similar scales used by Holmes and Rahe (1967) and Yamamoto and Kinney (1976) and had been adapted and used in previous studies (Arizmendi and Affonso 1987, Affonso et al 1988, Affonso et al 1989).

Affonso et al (1992) acknowledged their sample was lacking in representativeness and thus generalisation of the results was limited. For a variety of logistical and situational reasons, there was attrition of participants over the study period with only eight women completing the four interviews, thus interpretation of stressors identified after the first interview was limited. Affonso et al (1992) acknowledged that using NNU nurses may have biased the participants' responses as the babies were still in-patients. Wereszczak et al (1997) also reported this as a potentially confounding variable.

However Affonso et al (1992) tried to reduce any bias by not having nurses who had cared for particular babies conducting the interview with the parents. Data collection occurred at four potentially close intervals. This repeated measures format might also have introduced bias as the mothers could have remembered and used their previous answers, rather than responding according to their actual feelings at the time of the interview. Because of the limitations and because of the focus in the 'study', only the results of the first data collection will be reviewed.

Descriptive analysis revealed that separation from their baby was the most frequent negative stressor experienced by mothers. Separation was physical and psychological and appeared to consist of several aspects but it was unclear in the report what aspects applied to which mothers. One of the most negative aspects of physical separation for the mothers was not being able to hold the baby. When mothers eventually held their baby this was considered an extremely stressful experience. It was positively stressful because of the joy of being able to hold him and reducing the separation, but negatively stressful because of the fear that his condition would deteriorate.

Mothers also found going home without the baby and leaving him in the NNU after visits as negatively stressful and part of physical separation. Despite being encouraged to visit the baby and care for him, mothers found doing so negatively stressful, usually due to external factors such as a lack of transport, inadequate

childcare, and lack of financial resources. Not visiting and caring for their baby was part of what the mothers described as separation. A positive stressor was the thought of having the baby transferred to a hospital nearer to the mother's home, an intervention that would reduce the distance aspects of physical separation.

Although mothers reported that they felt "welcome to visit" (Affonso et al 1992, p 67), they also reported feeling psychological separation from their baby. This appeared to be related to the fact that their feelings were not understood by staff and that they were encouraged to interact with their baby in ways that were negatively stressful to them. Based on these findings, Affonso et al (1992) recommended that NNU staff reconsidered the ways in which they encouraged and promoted visiting and involvement in care-giving because of the additional stress placed on mothers who try to comply.

As part of a longitudinal study designed to investigate parental role attainment in parents of babies in NNU, Brunssen and Miles (1996) also investigated aspects of stress experienced by mothers of extremely sick babies in NNU, referred to in this thesis as the sub-study. There were 57 mothers of babies who had survived extreme illness recruited to the sub-study from one large teaching hospital in the south USA. No details of the recruitment process, the babies' characteristics, or the maternal characteristics were given.

Data were collected using three tools during one interview session either while the baby was still in hospital or immediately after discharge. The first tool was an adapted form of the Parental Stressor Scale for use in Neonatal Intensive Care Units (PSS:NICU) (Miles et al 1993), the PSS for use with the Hospitalised Infant (PSS:HI) (Brunssen and Miles 1996). In this adaptation only three dimensions of the hospital experience were evaluated; alterations in parental role, appearance and behaviour of the infant and the characteristics of the hospital environment. The reliability and validity of the PSS:NICU had been established and the reliability of the adapted tool was reported (Brunssen and Miles 1996). The researchers originally

developed the other two tools for use in the full longitudinal study, these were the Severity/Worry scale and the Stress Support scale. The complete Severity/Worry scale was used in the sub- study but only the Satisfaction sub-scale of the latter tool was used in the sub- study. The other sub-scale/s of the tool were not explained nor why only the Satisfaction sub-scale was chosen for use in the sub- study. The validity and reliability of these tools were not reported.

Descriptive analysis determined that the mothers found the infant's appearance and behaviour to be the most negatively stressful to them as well as aspects of their role alteration. Brunssen and Miles (1996) conducted regression analyses to determine the most significant contributors to the PSS:HI scores. The more worried the mother was on the Severity/Worry scale, the higher was her total PSS:HI score ($p = <0.01$) and the higher were her role alteration and hospital environment scores. In relation to the infant appearance and behaviour dimension, the scores were higher, i.e. the mother experienced more stress, the more worried the mother was, the more satisfied she was with her social support and the more severely ill she perceived the baby to be ($p = <0.01$). The nature of the mothers' social support was not explained.

Brunssen and Miles (1996) concluded that when a baby is hospitalised for a long period of time, the parents emotionally move from a crisis to a more chronic stress phase. The authors suggested interventions that might alleviate some of the stress mother's experience. These included continuing re-assessment of the maternal understanding of the baby's condition, refining this as required; acknowledgment of the mother's increased worries on seeing the baby ill, unresponsive and experiencing pain; appreciation of the alterations in the parenting role; and strategies to include the parents in care giving, especially related to the baby's comfort. It was acknowledged that evaluation of these interventions would be required.

Shields-Poe and Pinelli (1997) reported that mothers were significantly more negatively stressed than fathers by interaction with the baby ($p = 0.0001$).

As part of a longitudinal study of the development of children born prematurely, Miles and Holditch-Davis (1995) recruited 27 primary carers, 24 mothers and 3 grandmothers who had legal custody of the babies to participate when the babies were three years old. There was no differentiation between mothers and grandmothers in the report, as all were referred to as 'mothers'. The mothers and grandmothers completed three quantitative data tools assessing perceptions of the child compared with other children. However the data of relevance to the 'study' were generated during an individual semi-structured interview focusing on the memories of the baby's birth and time in hospital. Even after three years, the mothers and grandmothers reported painful recollections of the baby's stay in NNU, particularly of the appearance of the baby, the suffering endured, the equipment, and the threat of death or serious illness.

Miles and Holditch-Davies (1995) interpreted the parenting style of the mothers and grandmothers to be that of compensatory parenting, i.e. trying to compensate for the fact that the babies had been in NNU. The mothers and grandmothers reported that they 'spoiled' these children more than their other children who had not spent time in the NNU.

To further explore how mothers recalled their responses to the birth and admission to the NNU of their very low birth weight, high-risk baby three years previously, Wereszczak, working with Miles and Holditch-Davis (Wereszczak et al 1997), conducted a qualitative sub-study.

The details of subject recruitment are unclear. It is reported that 44 of the mothers in the longitudinal study were interviewed about their parental experiences from their baby's birth, and all participated in the sub-study. However the sample for the sub-study, reported as 44, included mothers and two grandmothers who were recognized as the baby's primary care giver. It is unclear therefore whether the sample consisted of 44 or 46 women. It is also unclear if any of these mothers and grandmothers were also recruited to the study reported by Miles and Holditch-Davies (1995). However,

it is clear that the participants had cared for their babies for three years and that the 48 babies had been born in one setting in the USA, weighed less than 1500 gm at birth and required mechanical ventilation. Although a small sample of women, there was a range of age, educational, social and ethnic backgrounds represented.

It is interesting to note that while aiming to explore how mothers recalled their experiences, Wereszczak et al (1997) also recruited two grandmothers. Whether the nature of the relationship between the baby and these primary care givers biased the findings in any way is not clear from the study report. The recruitment of grandmothers has not been a feature of other similar studies.

Wereszczak et al (1997) reported that one semi-structured interview with each participant was tape recorded and then transcribed. The interviewer/s was/were not identified. The open questions were related to the Parental Intensive Care Unit (ICU) Stress Model (Miles and Carter 1983), but the women were enabled to recall any aspect of their experiences in the NNU through additional open questioning. Data analysis began with content analysis to identify the main concepts, leading to the coding of the data and then clustering of the codes. The clusters were labeled and then compared to the Parental ICU Stress Model (Miles and Carter 1983), allowing detection of differences. There was no indication of what, if any, validation of the concepts, coding, cluster or labeling occurred.

The findings revealed that 90% of the women began by discussing their first visits to the NNU. The size, behaviour and appearance of the baby were most distressing, even to women who had been given information prenatally. The nature of the information and by whom it was given was not explained. However it is important to note that this aspect of preparation is being considered in the 'study'.

Other factors that were very distressing to women were the pain and the procedures the baby endured, and the alteration in their parenting role, with separation from the baby the most distressing aspect. Separation appeared to include difficulties visiting

and not being able to visit, the lack of participation in care and not being able to touch or hold the baby, and these were distressing recollections. Some of the women who had successfully expressed breast milk, recalled this as a positive experience. Others had been unsuccessful in expressing breast milk and regarded this as another failing, compounding the negative stress of psychological separation. These aspects had all been identified in the Parental ICU Stress Model (Miles and Carter 1983) as being negative stressors.

The uncertainty about the baby's condition and prognosis were distressing for the women, as was a lack of personal support from family. These variables were identified in the Parental ICU Stress Model (Miles and Carter 1983) as being negative stressors. However the stressful effect postnatally of prenatal stressors such as sub-fertility problems, previous perinatal loss, obstetric problems and previous preterm births were not part of the Parental ICU Stress Model, yet were recalled by these women as negative stressors.

The model suggested that support mechanisms could reduce the negative stress experienced by parents. The nature of stress reducing support and from whom it can be received were discussed with the participants. Straightforward explanations from the doctor, care and encouragement from nurses who would listen, and information and a tour of the NNU prenatally helped reduced the negative stressors for the women.

The stress management strategies that the women themselves used initially were of 'downward comparison', where the women compared their experience as being better than the experience of others in the NNU. Then they tried to find a purpose for what they were feeling by keeping a diary or concluding that they or the baby would be a better person as a result of the experience. Normalization was the third strategy that involved usually the woman and the nurse working together to make the baby's appearance, behaviour and care as much like the woman's expectations as possible.

This small study confirmed aspects of the Parental ICU Stress Model, yet the interviewing technique enabled exploration of additional aspects not addressed in the model.

The Parental ICU Stress Model (Miles and Carter 1983) was developed from data collected in the initial NNU experience when parents would be unlikely to volunteer negative feelings about the staff caring for their baby, in case the care was jeopardized in any way. However, negative feelings could be safely volunteered three years after an admission, when the baby's care was no longer the responsibility of those staff.

In the initial period after admission to NNU, women focussed on the baby, his condition, care and prognosis (Wereszczak et al 1997). Therefore it may only have been much later that the woman became aware of the effect her prenatal problems had on the stress she experienced when the baby was admitted to NNU and which she was able to report for the data collection three years later.

Appropriately avoiding generalisation of their findings, Wereszczak et al (1997) suggested that as the women's recall was very vivid even after three years, the care NNU staff offered women ideally before, and certainly during, the baby's stay in NNU, needed to be focussed on reducing the experience of negative stress. Although the sample consisted of women, Wereszczak et al (1997) suggested that parents needed to be enabled to share their feelings about the experience of NNU ideally before the birth, but certainly throughout the baby's care in the NNU.

4.1.3 Environmental stressors

Miles and Carter (1983) developed a Parental ICU Stress Model for use in investigations of the stressors affecting parents of children in paediatric intensive care units in the 1980s (Carter and Miles 1989). From this work they also developed a valid and reliable tool, the Parental Stressor Scale for use in Paediatric Intensive Care Units (PSS: PICU) (Carter and Miles 1989). Miles also researched stressors

affecting parents in NNU and in her study of the environmental stressors perceived by parents as stressful, Miles (1989) recruited a convenience sample of 53 parents of 37 babies from a NNU in the mid-west of the USA. Miles adapted the PSS: PICU for use with parents in the NNU, and developed the PSS: NICU based on an extensive review of the literature, a critical evaluation by clinical experts, and consultation with parents in a parent support group. Although summarized in the report (Miles 1989), the tool's development, reliability and validity was reported in more detail in a separate publication (Miles et al 1993).

Using the PSS: NICU, parents were asked to rate their perceptions of four dimensions of the NNU environment on a five point scale, rating zero for no experience to five for extremely stressful. The four dimensions were the sights and sounds, staff communication, parental role alterations, and the baby's behaviour and appearance.

Parents were asked to complete the PSS:NICU at least two days after their baby had been admitted, however it was usually completed on the day of transfer or discharge from the unit. The timing of data generation was therefore very variable.

As reported in section 4.1.1, the most stressful dimensions were the baby's appearance and behaviour. The parental role alteration was the next most stressful aspect, followed by staff communication, and sights and sounds of the NNU. Frequency tables of the most and least stressful items were helpfully included in the report. Miles (1989) was prescriptive about the interventions that staff could introduce to reduce the impact of these stressors. She also made specific comment about the fact that the physical environment was the least stressful dimension for the parents in the study. Speculating as to the reasons for this finding, she suggested that perhaps parents were too focussed on their baby to be concerned about the sights and sounds of the NNU, or that previous experience in NNUs or exposure to television programmes about NNUs had reduced the impact of this dimension. Because of the focus of the 'study', it is important to note the aspects of preparation.

In the study by Affonso et al (1992), the environment and procedures were perceived as positive stressors rather than negative stressors in the first assessment, with mothers constantly reminded that the baby required intensive care and that was what kept the baby alive. Affonso et al (1992) concluded that the mothers were overwhelmed by all the other stressors in relation to their baby and so had not concerned themselves over the more global nature of the environment and procedures. This conclusion concurred with that of Miles (1989).

The theoretical framework on which Shields-Poe and Pinelli (1997) based their descriptive correlational study was that specific variables could influence the parental response to the experience of NNU and/or could affect their general feelings of stress and anxiety (see section 3.3.4). The study's objective was to identify the factors that could predict, relieve, increase or were related to parental stressors. They speculated that there were four dimensions in the NNU that could influence parental stress. One of the dimensions was the sights and sounds.

Significantly fewer mothers whose baby was in the 'neonatal unit' were prepared for the sight and sounds of the NNU ($p = 0.0001$). There was no such difference for fathers. Parents considered preparation as previous experience in the NNU, having had a tour of the NNU, or having worked in the NNU. Because of the focus of the 'study', it is important to note the aspects of preparation that these parents perceived. The total stress scores did not differ between fathers and mothers, but the mothers were significantly more negatively stressed than the fathers by the sights and sounds of the NNU ($p = 0.01$).

Regression analyses of the independent variables and the stress scores in each of the four dimensions were undertaken. In the dimension of sights and sounds, lower stress scores for mothers were associated with the 'perinatal unit', with a well baby, and with a planned pregnancy. However the latter was the only relationship that

reached statistical significance ($p = 0.02$). For fathers, in the dimension of sights and sounds, higher stress scores were associated with higher trait anxiety scores ($p = 0.03$), and seeing the baby in NNU within the first 24 hours ($p = 0.04$).

From their findings, Shields-Poe and Pinelli (1997) made several recommendations about altering the most stressful factors. In the dimension of sights and sounds, several variables would be impossible to alter but some interventions were recommended. These included preparing parents by discussion with them and allowing them to visit the NNU prior to the birth or at least giving them the opportunity to read about NNU care. Inclusion of an explanation of what the baby's appearance might be given to parents before they saw the baby might also help reduce the stress of this experience. The authors indicated that it was supposition that these interventions would reduce parental stress, and they suggested further research was needed to assess if any of the interventions had an effect on parental stress. These aspects were addressed in the 'study'.

4.1.4 Interaction with staff

Harper et al (1976) (see section 3.3.2) found parents were concerned about the care given to their baby, and 44% of parents reported that the care improved when they were present. Therefore, although they found visiting anxiety provoking, they did so to ensure an appropriate standard of care for their baby.

Miles (1989) (see section 4.1.3) found that communication/interaction with staff was the third most stressful factor for parents, particularly in relation to not being given sufficient information about the baby's condition and treatment in a way that they could understand and trust. As the third most stressful aspect out of the four investigated, Miles (1989) suggested that this low rating might have been due to the high quality care provided in the unit. However, realistically she offered another explanation that parents were too intimidated to give an honest view while their baby was still an in-patient.

Affonso et al (1992) found that NNU staff appeared not to understand mothers' feelings about visiting and care-giving. Although the staff encouraged such activities, the mothers felt that the ways in which staff did so were negatively stressful to them. Affonso et al (1992) recommended that NNU staff reconsidered the ways in which they encouraged and promoted visiting and involvement in care-giving to try to eliminate the additional negative stress they place on mothers.

In the study by Shields-Poe and Pinelli (1997) relationships between PSS:NICU scores in the staff behaviour and communication dimension were correlated with the other independent variables to define any relationships. Mothers had lower PSS: NICU scores if they had high trait anxiety ($p = 0.02$), and perceived that their baby was sick ($p = 0.02$). For fathers, PSS: NICU scores were higher the sicker the father perceived the baby to be ($p = 0.009$), if the pregnancy was unwanted ($p = 0.01$) and the longer the baby had been in the NNU ($p = 0.01$). Shields-Poe and Pinelli (1997) recommended clear, honest and continuing information about the baby's condition and his care to help clarify realistic perceptions of the baby's morbidity.

Difficulties with staff had not been identified in the model that guided the study by Wereszczak et al (1997) as stressful, but was recalled by the women as a negative stressor. Difficulties obtaining consistently accurate information, the lack of positive news and the pessimistic views of some staff were also identified as negative stressors. Some of the women (46%) felt their baby had not received appropriate care in the NNU, neither from doctors nor from some of the nurses.

Summary

The studies were mainly quantitative in design and used a variety of data collection tools. However the findings were generally consistent, despite the range of years over which the research has been conducted. The main causes of negative stress for parents of babies in NNU were discussed under the headings of: the baby's appearance, behaviour and degree of illness; separation, inability to freely visit and care for the baby, and alteration in parental role; environmental aspects; and

interaction with neonatal staff. Most studies explored most of these stressors, therefore there was some overlap in the discussion of research findings in this section.

These results suggested that the main parental stressors had been similar over time, as the later studies confirmed the findings of earlier studies. The frequency and intensity of the stressors that parents continued to experience were emphasized in the findings of Shields-Poe and Pinelli (1997). Having a baby in NNU appears to be no less stressful for parents over time. However, in the conclusions to their studies, most authors recommended strategies to reduce the stressors and, had these been fully implemented by neonatal and related staff, the number of stressors and the stress experienced by parents might have been expected to reduce. However this did not appear to be the case.

Some of the researchers had recommended preparation of parents for the experience of NNU as an appropriate stress reduction strategy (Harper et al 1976, Jeffcoate et al 1979 a and b, Miles 1989, Shields-Poe and Pinelli 1997). It is accepted that the admission of a baby to the NNU is a stressful or potentially anxiety-provoking situation or a crisis for parents. Therefore the recommendation of any strategy, including preparation, that would reduce the stress and the anxiety or the crisis appeared to be a logical one.

It was important to determine whether preparation was indeed an appropriate stress reduction strategy and the effect of preparation of parents for NNU care. These are the foci of the next section.

4.2 Preparation for potentially stressful or anxiety-provoking events or crises, predictable or unpredictable

Introduction

Several of the studies related to stress, anxiety and crisis have suggested that the experience could have been modified or even avoided if the individuals concerned were prepared for the event. Preparation for varying stressful events has also been shown to be effective in making the adjustment to that event, when it actually happened, more positive (Parkes 1975, Elbourne et al 1989, Oetker-Black 1993).

Kaplan and Mason (1967) viewed crisis as the complex mixture of feelings an individual experienced when he or she tried to deal with an event for which they were not sufficiently prepared. They proposed that if the individual was prepared for the crisis, primary crisis prevention, the crisis could possibly be averted, with no threat then to mental health. They suggested that this might apply to parents of babies in NNU.

Preparation in the form of primary crisis prevention was certainly considered an important part of crisis intervention and this aspect was explored in more detail as part of the theoretical framework for the study that is reported in chapter five. Therefore the discussion in this section is more succinct. However several examples of primary crisis prevention related to potentially stressful or anxiety- or crisis-provoking events are explored. Examples related to the focus of the 'study' are used when relevant. Consideration is also given to primary crisis prevention in relation to relatively unpredictable events.

4.2.1 Primary crisis prevention

Primary crisis prevention is also referred to as anticipatory planning (see section 5.2.3), however in this sub-section the term anticipatory planning will not be used. Janosik (1994) discussed primary crisis prevention as preparation, the aim of which was to reduce crises in vulnerable populations. This was done by identifying and moderating the variables that were likely to result in crisis, and by reinforcing the coping skills of those identified as the at risk populations. The first element of primary crisis prevention involved identification of situations likely to result in crisis and the variables that required to be moderated. Once the variables were moderated, the situation was less likely to result in crisis.

4.2.1.1 Preoperative preparation

One example that Janosik (1994) used to illustrate primary crisis prevention was the admission of a child to hospital. This had been recognized as a potential crisis because the child feared the unknown. The variables that were likely to be unknown to the child were identified. Strategies were then developed and implemented so that the child became familiar with the variables in a non-threatening manner. The strategies included a pre-operative visit to the ward and anaesthetic room, and through play techniques, an explanation of what was to happen and familiarization with the clinical equipment and nursing care. These strategies so effectively reduced the potential for crisis for the child that a policy was developed to ensure such preparation became recognized as good practice and was implemented in hospitals nationwide (National Association for the Welfare of Children in Hospital (NAWCH) (1990).

This policy was augmented to include the preparation of parents for their child's admission to hospital and this related to the second element of the preparation that Janosik (1994) recommended, reinforcement of the coping skills of the at risk populations. Parents underwent similar preparation to their child, as well as what they could expect and what they could do in the hospital situation. Although there

was not the opportunity for rehearsal in the hospital setting, parents had the information and could reflect on their coping mechanisms.

Although Janosik's (1994) example was for pre-operative preparation for children, pre-operative preparation to improve the physical and emotional outcomes for patients generally has been advocated and practiced for a considerable time. In a valuable review of the historical development of pre-operative preparation, Oetker-Black (1993) traced its evolution through the first 80 years of the twentieth century.

It was not until the 1940-1959 period that patient teaching became part of pre-operative preparation. Although individual needs had been considered, including emotional needs, it was not until the 1960-1979 period that the emotional and psychological preparation was recognized as being as important as the physical preparation. Oetker-Black (1993) concluded that the majority of studies she reviewed indicated the positive benefits to the patient of pre-operative preparation, both emotional and physical. However she also included the conclusions of Janis (1971) who had observed that the patients who were most calm and confident pre-operatively, tended to be more anxious post-operatively than patients who had been worried pre-operatively. Janis (1971) suggested that some fear pre-operatively was necessary as it stimulated the development of coping strategies that patients rehearsed. This is linked to the rehearsal that Janosik (1994) suggested was an important part of preparation. The pre-operatively worried patients also asked more questions about what was to happen and so were thought better prepared and were more able to cope post-operatively.

The recommendations for pre-operative preparation are therefore that it should be evidence based and responsive to the patient's individual physical and emotional needs. However a degree of positive stress is still required to stimulate the patient. There is clear linkage here to Lazarus (1966) in relation to positive and negative stress.

4.2.1.2 Preparation for parenthood classes

As part of antenatal care, preparation for parenthood classes are usually offered to pregnant women after 28 weeks gestation for six to eight weekly sessions. Partners can usually attend some of the classes (Sweet 1988).

The aim of the classes is to provide information through a structured series of sessions, about uncomplicated pregnancy, childbirth and early child rearing. This information is designed to help women understand what is happening or is going to happen to them and to help them be better able to cope with these situations. If uncomplicated pregnancy and childbearing are potentially crisis situations for prospective parents, then preparation for parenthood classes can be classed as primary crisis prevention (Sweet 1988).

However, just as the benefits of antenatal care were reported to be open to question (Oakley 1981a, Enkin and Chalmers 1982, Rees 1982), so too was the effectiveness of preparation for parenthood classes. Glikison (1991) reported a view that suggested that the education of patients was designed to make patients adapt their behaviour to suit the system. If this is true of preparation for parenthood classes, the needs of women are unlikely to be met. Oakley (1981a) and Rees (1982), after studying preparation for parenthood classes, suggested that they offered conflicting advice, incorrect and unrealistic information, poor structure, poor teaching strategies and lack of organisation, as well as a lack of acknowledgement of parent's existing knowledge and specific needs.

These criticisms appear to have persisted and in the 1990s, researchers were still investigating and recommending ways in which the faults of preparation for parenthood classes could be overcome (Hallgren et al 1995). Having identified that previous studies had recommended that women's views be listened to when designing and conducting preparation for parenthood classes, Hallgren et al (1995) chose to listen to women's views when they investigated preparation for parenthood classes using a qualitative approach for their study. Their qualitative approach is the

main reason for including a critique of this study in the literature review for the 'study'. The other reason for its choice was that it was conducted in the 1990s, thus giving findings pertinent to contemporary preparation for parenthood classes, despite the study having been conducted in Sweden.

Hallgren et al (1995) selected a convenience sample of 11 women, aged 21 - 33 years and educated to upper secondary school and university levels, and their partners. These couples attended midwife led preparation for parenthood classes in an urban Swedish centre. The couples participated in an unstructured interview on three occasions; at 27 weeks gestation before preparation for parenthood started, at 36 weeks gestation after preparation for parenthood was complete, and 1-3 weeks after the baby's birth. On the first occasion, all participants were interviewed separately but on the subsequent occasions, of their own accord, seven couples chose to be interviewed together.

The women's perceptions of childbirth were as either a threatening event; or as a joyful but frightening event; or as a normal process and a challenge; or as a trustworthy life event. Two women held the last perception and felt that the preparation for parenthood classes had played a part in their positive experiences.

Five women held the first two perceptions and were unmotivated to attend the classes but had done so because the midwives invited them. Despite the classes, four of the women felt unprepared for the birth and one felt the classes were of no use. However the remaining two did feel the classes had added to their understanding of their experiences.

Four women held the third perception and were motivated to locate information and thus attended the classes. They felt that some of the information was anxiety provoking because it dealt with complicating factors. Again, despite their attendance, these women did not feel prepared for their experiences of childbirth.

Hallgren et al (1995) concluded that the classes did not meet the women's needs and that their fears may have reduced their receptiveness to the information given within the classes. Their recommendations were that midwives should promote realistic expectations without the diminution of women's confidence and excitement; offering support; and taking into account individual perceptions and needs.

This was a well-conducted qualitative study using a small sample for intensive data collection. The initial constant comparative analysis was augmented in a second stage of analysis by referral to the framework proposed by Antonovsky (1987), who suggested that humans use varying abilities to deal with the feelings experienced through stress. However, Antonovsky (1987) suggested that uncomplicated pregnancy and childbirth were stressors for which humans had few available resources. Therefore they required to work towards a sense of coherence to understand, manage and find meaning in what they experienced during pregnancy and childbirth.

These findings confirmed that the main aim of preparation for parenthood classes which was to prepare women for the experiences of uncomplicated pregnancy, labour, birth and parenting, was still not adequately met. Women who attended classes suffered consequences due to the lack of preparation.

These findings confirmed Hancock's (1994) view that preparation for parenthood classes were not meeting the needs of women, leading to dissatisfaction. She postulated that the dissatisfaction would lead to women not attending the classes and confirmed this by reporting that indeed less than 50% of pregnant women attended preparation for parenthood classes and less than 50% of them completed all the sessions. She reported that of those relatively few women who did attend, 79% felt fully prepared for labour. She concluded that thousands of women were therefore being failed by a system that was designed to support them emotionally and practically as it prepared them for potentially stressful situations associated with

uncomplicated pregnancy, childbearing and parenthood. Preparation for parenthood classes cannot therefore be considered as primary crisis prevention.

Poor attendance is not only a phenomenon limited to the UK. Studies from the USA and Australia have indicated similar poor attendance rates. Comparisons of those women who attended with those who did not, indicated that attendees were older, had higher educational qualifications, were married and represented the higher social groups (Sturrock and Johnson 1990, Redman et al 1991, Lumley and Brown 1993, O'Meara 1993).

It could be argued that the women who were more likely to attend were more likely to have an uncomplicated pregnancy, labour and birth. However, Gould (1986) and McIntosh (1988) suggested that the women who would most benefit from preparation for parenthood classes were younger, from a lower socio-economic group, were unmarried and lacked social support networks. However these were also the women who were least likely to attend the classes. These women were therefore potentially disadvantaged by not having the parenthood education.

However Gould (1986), McIntosh (1988) and Hancock (1994) questioned whether the preparation for parenthood classes in the existing form would have been of any benefit to these women anyway. Classes were offered too late to have real effect on the pregnancy and the changes in lifestyle suggested as ideal were unrealistic for these women. Therefore these women were unlikely to attend and again the "inverse care law" (Rooney 1992 p13) applied.

It has been suggested that abnormal aspects of pregnancy, childbirth and parenthood should not be included in preparation for parenthood classes. These aspects were thought too distressing for parents to discuss and would result in unnecessary stress during what should be a happy experience (Fleissig 1993, Greig 1998). However parents who experienced unexpected outcomes to pregnancy, have been shown to benefit from information about and preparation for these events (Fawcett and Burritt

1985, Hillan 1992a, Freda et al 1993). In a review of the literature on the effectiveness of preparation for parenthood education, Nolan (1994) concluded that women wanted honesty and realism from those teaching preparation for parenthood classes and wanted an agenda that suited their needs.

The admission of a baby to the NNU is usually an unexpected outcome and has been recognized as a negative stressor. Therefore, it was important to determine if there was discussion of this potentially negative stressor and the strategies to cope with it in preparation for parenthood classes. If there was, there could be some reduction in the stress and anxiety experienced by parents, and therefore this aspect of preparation for parenthood classes could be considered successful primary crisis prevention. (Shellabarger and Thompson 1993).

A postal questionnaire survey of the maternity services in Lothian sampled 788 women (82% response), who had given birth to a live baby during the period March to April, 1992 (Lothian Maternity Survey 1993). Of these women, 81% were very or mostly satisfied with the information and communication they received during pregnancy. Of the babies born to the sample, 13% spent time in a NNU, however there was no indication of whether their mothers had received prenatal information nor whether they were satisfied with it or not.

No evidence could be found in the literature on the amount or content of information given in preparation for parenthood classes about NNU care, therefore a survey of Scottish midwives was conducted (Greig 1998). Most of the participants reported they offered pregnant women some information about NNU care, either in preparation for parenthood classes or as part of individual discussions. The content of the information varied considerably and it was unclear from the survey how many pregnant women were exposed to this information. The study's design was limited in that no method of validating what the midwives reported they did was included.

If pregnant women in Scotland follow the apparent trend of non-attendance at preparation for parenthood classes, the potential benefits of primary crisis prevention are not available to them. If they do attend classes or have information shared with them individually, because the content varies, the potential benefits of primary crisis prevention may also vary.

Janosik (1994) noted that the other main problem of primary crisis prevention was that not all types of crisis were amenable to prevention. Sudden, unusual events that were totally unpredicted could not usually be prepared for. While many unpredictable events do not relate to the focus of the 'study', prenatal testing was considered sufficiently closely related and there is a brief discussion of the literature related to this topic in the following sub-section.

4.2.1.3 Preparation for related unpredictable events

As was discussed in chapter two, the prevailing view of prospective parents and midwives is that pregnancy and childbearing are usually uncomplicated, therefore abnormalities of pregnancy or the fetus could be regarded as unpredictable. However, prenatal screening tests for abnormalities are available to all women during pregnancy (Telfer 1997). Some tests are considered as routine, such as those for maternal anemia or infections. Other tests are more specialized, such as those for fetal abnormalities. These can be offered to all women, but might also be targeted at women considered at higher risk.

The rationale for including a brief discussion of prenatal screening tests in this literature review is as follows. It has been recognized that pregnant women, while considering pregnancy as uncomplicated, generally choose to have many of the screening tests for abnormalities, usually considered unpredictable events. It is also acknowledged that the tests, waiting for the results, and considering further options if the results are inconclusive or indicate problems, can be anxiety provoking (Telfer 1997). Thornton et al (1995), in their review of the literature, found that it was suggested that midwives and obstetricians use primary crisis prevention strategies to

try to give women the opportunity to make choices and to try to reduce the associated anxiety they experience. These strategies should include giving information about the tests, both verbal and written, to pregnant women and supporting them in their decision-making. However Thornton et al (1995) considered there was a paucity of research evidence on how the information should be delivered and how much information was optimal, so they undertook a study to try to generate such evidence. Some of the findings are linked to the focus of the 'study'.

To test the effect of non-directive information about all prenatal testing given to pregnant women in three different ways before 16 weeks gestation, Thornton et al (1995) conducted the largest randomized controlled trial to date in such a population. A sample of 1691 pregnant women was recruited from antenatal clinics held in northern England at one district general hospital and one university teaching hospital. The sample was representative of all groups except ethnic minorities. Participants were randomized to one of three groups. The control group received routine information during the booking clinic visit and was given an information leaflet. In the first experimental group, the participants had the routine information and leaflet and were then invited to attend an individual information giving session with additional information leaflets given. In the second experimental group, the participants had the routine information and leaflet and were then invited to attend an information giving session along with four to 12 other participants. The information given and the information leaflets were the same as with the first experimental group.

Four self-completion postal tools were completed at 16-18 weeks, 20 weeks, 30 weeks gestation and six weeks postnatally. The tools were the STAI, the Hospital Anxiety and Depression scale (HAD) scale (Zigmond and Snaith 1983), a researcher developed questionnaire about knowledge and understanding, and a researcher developed questionnaire about pregnancy and fetal abnormality. Data on the uptake

of the tests were also generated, but are not included here as they are irrelevant to the 'study'.

The results indicated that the participants in the experimental groups reported better understanding of the information and that the information was more relevant to them, than the participants in the control group. The interpretation of relevance was not explained. Individual sessions were better attended than the classes, and even for those who did attend classes, they were unpopular and classes were therefore considered an ineffective method of transmitting information. This conclusion supports earlier conclusions that antenatal classes were ineffective (Gould 1986, McIntosh 1988, Glikison 1991, Hancock 1994).

There were no significant differences in the anxiety of participants at 16-18 weeks. Those participants given individual information had lower anxiety than the control participants and those receiving information in classes after 20 weeks and this persisted through the puerperium. Individual information-giving before 16 weeks, but not at the booking clinic visit, was recommended. Thornton et al (1995) were cautious about generalisation of their findings to ethnic minorities because of their under-representation in the sample.

If the results from this study were extrapolated to prenatal preparation of parents for NNU care, then information could be given verbally in individual sessions with supplementary written information during the early second trimester of pregnancy. Anxiety would not be adversely affected. No literature could be located that indicated such extrapolation nor that this type of strategy had been implemented.

Worrying prospective parents unnecessarily about complications of pregnancy and childbearing has been offered as the reason for not providing information, particularly in relation to prenatal information about NNU care (Fleissig 1993, Greig 1998). This concern may be unfounded. The conclusions of the study by Thornton et al (1995) indicated that parents appeared less anxious when more information is

given to them. However, in relation to other unexpected abnormalities of pregnancy and childbearing, little literature was located about the content of information given during preparation for parenthood classes and what effect there was on the recipients, especially in relation to anxiety.

Summary

While some women may not be anxious in pregnancy, some may be. There is evidence that supports the view that primary crisis prevention could be effective for women who might be very anxious, with preoperative preparation illustrating a generally positive example. However there are problems with this type of intervention. The example of preparation for parenthood classes illustrated that the individuals concerned need to be part of the intervention and it must be relevant to their needs, for it to be successful as primary crisis prevention. If women do not attend the classes, and/or the content is irrelevant to them, the potential for negative stress, anxiety or crisis might be increased. It is much more difficult to prepare for unpredictable events. However specific primary crisis prevention strategies used to prepare parents for prenatal testing did indicate some benefits for them, emphasizing the importance of involvement and relevance.

Logically it was important to determine if the literature indicated any evidence that the crisis of the admission of a baby to the NNU, usually an unpredictable event, was amenable to primary crisis prevention. Selected relevant literature is reviewed in the following section.

4.3 Preparation of parents for the admission of their baby to NNU

Introduction

Caplan et al (1965) suggested that the admission of a preterm baby to NNU was potentially a crisis and that preparation of parents, primary crisis prevention, could reduce the parental stress and anxiety and the possibility of crisis. When primary crisis prevention strategies have been implemented with other populations, the benefits are reported to include making the adjustment to the event, when it actually happened, more positive (NAWCH 1990, Oetker-Black 1993, Thornton et al 1995).

In this section, the literature related to preparation of parents for NNU admission is reviewed and any effects are discussed. The section is divided into two sub-sections that focus on the NNU tour and prenatal information respectively. Apart from the study by Mason (1963) (see section 5.1.3), little literature was located that investigated previous experience of NNU and primary crisis prevention. Therefore a separate discussion of previous experience is not included in this section.

4.3.1 The prenatal tour of NNU

Parents who were known to be giving birth to a baby who would require admission to NNU should be introduced prenatally to NNU staff and see the NNU environment. This strategy was recommended by Boxall and Whitby (1983) and appears to have been widely implemented (Griffin et al 1997). Thornton et al (1984) suggested that the tour would help parents get information, see preterm babies, the equipment and the NNU's facilities. They did warn that while the tour would be helpful, it might also be frightening for parents.

As part of a large study on parent satisfaction with care given in one south-west English NNU, Stewart (1989) conducted a survey of 170 parents representing a 68%

response. The parents' babies had been in the NNU for at least 3 days between 1987 and 1988. The parents were slightly older than the national figures with which Stewart compared the sample's characteristics, but otherwise the sample was representative of the parents usually with babies in that NNU.

The results indicated that only 26% of parents had thought their baby would require NNU care and only 17% of the first time parents had considered the possibility. Stewart (1989) concluded that the majority of parents were shocked by their baby's admission. These findings emphasise the unpredictable and unexpected situation that many parents experience when their baby is admitted to NNU (Caplan et al 1965).

Stewart (1989) reported that some parents had participated in a prenatal tour of the NNU and 71% had found it helpful in preparing them for the sights and sounds of the NNU. However 20% of the parents who toured the NNU found the experience unhelpful as it worried them or they did not get a good view of anything in the unit. Unfortunately the actual number of parents who toured the NNU was not included, therefore the percentage figures must be interpreted with caution.

Stewart (1989) indicated that most parents felt it was important to have some preparation for NNU care, either by being told about it or touring the NNU prenatally, because they felt it would reduce the feelings of shock if NNU care was required. It was implied that this was the benefit the parents had experienced. Stewart designed her recommendations around this view, but did warn that it was important to balance preparation with the fact that most parents would be unnecessarily forewarned or would be more worried by the preparation.

Griffin et al (1997) were concerned about the lack of standardization of NNU tours and thus the potential for varying quality, as well as the lack of systematic evaluation of the intervention. Therefore they designed a study to describe parental reaction to a tour of the NNU during a pregnancy designated as high risk. Using a qualitative approach, 13 parents, ten mothers and three fathers, from one

mid-western USA urban NNU, were recruited. Four of the parents had experienced a baby in the NNU previously. Data collection was by interview and the researchers planned to conduct the first interview with all parents within a week of the NNU tour. If the baby was subsequently admitted to the NNU, a second interview was planned for between two and seven weeks after the birth. The rationale for these time frames was not given.

Six parents completed only the first interview as their baby was not admitted to NNU. Four parents completed both interviews. In three cases, the baby was born before the first interview could be conducted, so the parents participated in a combined interview within a week after the birth. It was unclear whether the parent participating in any of the interviews was the mother or the father.

Qualitative analysis revealed three categories; description of the tour, benefits of the tour, and evaluation of the tour in relation to arrangements, conduct and advice. These categories were well described with illustrative quotations used appropriately. The main content of the tour included seeing and having explanations about other babies and equipment, having explanations about the role of staff and the role of parents in NNU, including the visiting policy.

The benefits of the tour were that it decreased fears, inspired hope for the baby's prognosis, provided reassurance about NNU care, and prepared the parents generally for their baby's care in NNU.

The tour was positively evaluated and parents expressed the view that all parents whose pregnancy was high risk, should tour the NNU. Most thought the tour should occur very soon after the designation of high risk had been made. If this suggestion was implemented, then the problem identified by Redshaw et al (1996) might be overcome. They noted that the NNU tour was usually undertaken when the woman was admitted to hospital and/or was in labour, thus her receptivity to information given during the tour was questioned (Redshaw et al 1996).

Griffin et al (1997) reported that the parents suggested that mothers should be accompanied on the tour by their partner or other support person. While the information on the tour was appreciated, parents wanted more specific, individualized information. An example of this was that they wanted to know about babies with a similar gestation and/or diagnosis to theirs. However this could be problematic if the parents did tour soon after the high risk status of their pregnancy was established, yet the birth time was unknown.

After their baby was born, the parents realized that they might have benefited from having more information about their role in the NNU prior to the birth. They therefore suggested that more detail on that aspect be given during the tour. The knowledgeable, compassion of the nurses who took the parents on their tour was much appreciated.

The parents acknowledged that aspects of the tour were both positively and negatively stressful. The environment was negatively stressful but they appreciated that it was necessary to provide comfort and care for their baby, thus positively stressful.

Although this was a small qualitative study, there was systematic examination of the NNU tour. The researchers suggested that the findings would offer the basis for a future intervention study to determine the effects of the tour on the parents' experience of the NNU. This suggestion assumes that a standardized tour format could be developed and that comparison would be between parents who undertook the tour and those who did not. The outcome measures of the proposed study were not proposed.

Giffen et al (1997) also indicated the need for more data in relation to fathers. Only three had participated in their study and a larger sample size was recommended in future research.

While a tour of the NNU may be available to some parents, the opportunity to give information about NNU is potentially more widely available. This strategy is discussed in the next sub-section.

4.3.2 Prenatal information to parents

For many parents a tour of the NNU is not possible, therefore the literature was searched to determine what, if any, information was given to parents prenatally about NNU care. Despite the recommendations related to primary crisis prevention, a review of pertinent literature failed to identify what, if any, information was included on the possibility of NNU care, in prenatal clinics or prenatal preparation for parenthood classes run by midwives. Lay literature available to prospective parents tends not to refer to NNU care, or does so positively.

In her survey, Stewart (1989) determined that little preparation, in the form of information, for the possibility that their baby might require NNU care was given by health professionals to parents. Only 11% of the 170 participating parents had the topic discussed in preparation for parenthood classes, although 18% of the parents did not attend classes, either from choice or because the baby was born prior to the classes starting. Only 18% of the parents had the topic discussed in antenatal clinics. It was unclear if any of these parents had also attended and received information in preparation for parenthood classes. Those parents who had been given information felt they had benefited. They felt the shock of having a baby admitted to the NNU was lessened. There were no details given as to the content of the information. Neither was there indication of how the parents having a second baby in NNU felt, apart from their anticipation of a subsequent admission.

A postal questionnaire survey of the maternity services in Lothian sampled 788 women (82% response), who had given birth to a live baby during the period March to April, 1992 (Lothian Maternity Survey 1993). Of these women, 81% were very or mostly satisfied with the information and communication they received during

pregnancy. There was no indication of whether any of the information referred to NNU care. Of the babies born to the sample, 13% spent time in a NNU. Satisfaction with the NNU was expressed by 95% of the women, although there was no linkage with any prenatal information they might have received.

As part of a large Department of Health survey of neonatal nursing, Redshaw et al (1996 p200), concluded that there should be " more antenatal preparation regarding neonatal care", but the content, presentation and timing of such preparation was not elaborated on. However as the nature of the provision of prenatal preparation of all parents about NNU care was not clearly identifiable from the literature, it would be difficult to make specific recommendations about how much would constitute 'more'.

Because of the lack of evidence in the literature about what preparation and/or information was given to parents prenatally about NNU care, a survey was undertaken (Greig 1998). Because this survey was a foundation of the 'study', a reprint of the publication is included in Appendix 2. However, the main findings are reported here for completeness in this section.

The findings showed that the majority of the midwives surveyed who worked in the community, prenatal ward, labour ward or NNU, gave information about NNU care to parents with whom they were in contact. Eight rural community midwives did not routinely give information. Midwives involved in preparation for parenthood classes offered specific information at a median gestation of 28 weeks gestation. More information was given to women and their partners if the pregnancy was designated as high risk.

The midwives indicated that they addressed most of the suggested topics. These topics included:

- which babies require neonatal care
- what a preterm baby looks like

- what problems babies may have
- what treatment is available for these babies
- what long-term problems these babies may have
- what the NNU looks like
- when parents are allowed to visit NNU
- who else can visit the baby
- what parents can do for the baby when he/she is in the NNU.

The topics about which less information was given were the long-term problems, what the preterm baby looks like and on the treatment for babies (Greig 1998).

Several methods of teaching were used, especially discussion and question and answer, with a tour of the NNU was a common strategy. Few midwives shared information using audio-visual methods.

The key conclusion from the survey was that the majority of midwives sampled offered information prenatally about NNU care, with many midwives tailoring this information to the woman's needs.

The implications for practice that were suggested from the findings were that there should be consideration of the need to give information to all pregnant women and their partners, the most appropriate time for giving such information and the use of audio-visual teaching resources.

It was suggested (Greig 1998) that the findings would inform further study of the extent to which prenatal information about NNU meets the needs of parents. Therefore this aspect will be included as a research question in the 'study'.

Summary

Parents with babies in NNU can experience many stressors and preparation for the experience of NNU was considered a strategy that would reduce the negative effects

on parents. Primary crisis prevention, as a crisis intervention strategy, has been shown to be beneficial for several populations in different circumstances.

Primary crisis prevention for parents of babies in NNU could include prenatal information about NNU, a tour of the NNU, and previous experience of NNU. There is limited evaluation of these strategies in relation to parents with an identified high-risk designation, although beneficial effects for parents have been reported. No evaluations of these strategies could be located in relation to all parents with babies in NNU.

This gap in knowledge therefore became the justification for the 'study'. However in order to appropriately locate the 'study' with the existing knowledge, a theoretical framework was formulated and this is explained in the next chapter.

Theoretical framework

Chapter 5

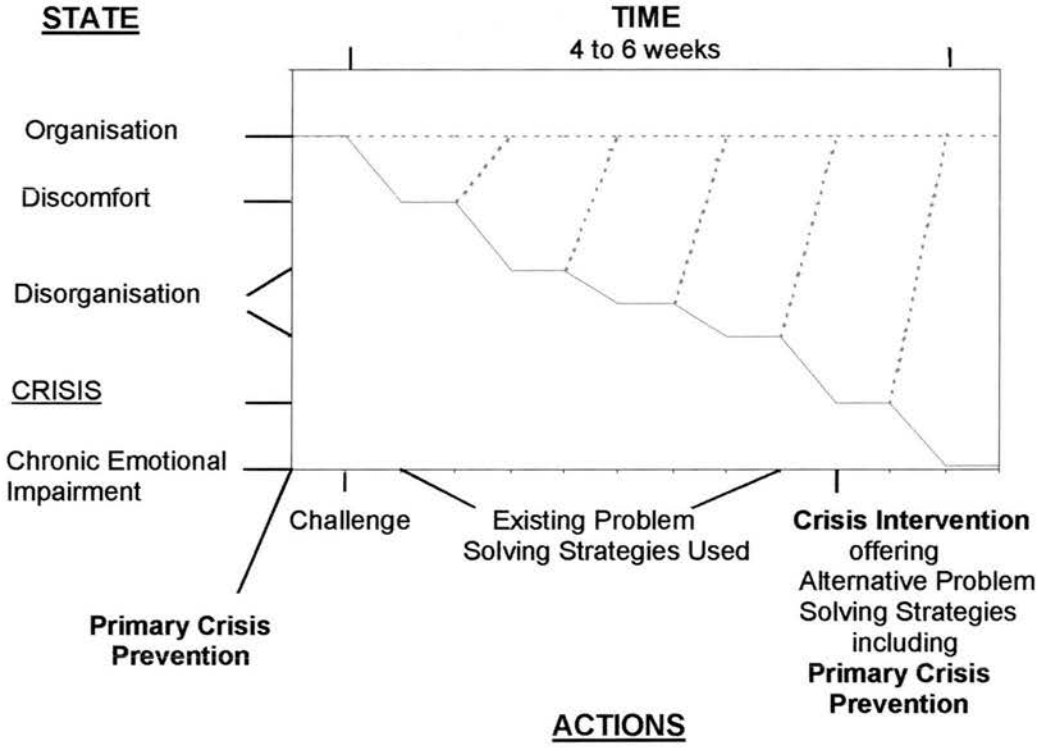
Crisis theory and crisis intervention theory

Introduction

Crisis theory and the part of crisis intervention theory known as primary crisis prevention were chosen as the theoretical framework for the 'study'. In this chapter, the theoretical framework is explained in two main sections. In the first section there is discussion of crisis theory and in the second section there is discussion of crisis intervention theory in general, with further explanation of anticipatory planning, also referred to as primary crisis prevention. The principle findings that informed the theoretical framework were from the classic studies of Caplan (1960), Caplan et al (1965), Lindemann (1944) and Morley et al (1967). The work of other researchers and authors helped develop and clarify the framework. A diagrammatic representation of the framework was devised (see figure 5.1).

Figure 5.1

The theoretical framework of crisis theory and crisis intervention



The elements of the framework are fully discussed in this chapter and referral to the diagram may assist the reader's understanding. However, to orientate the reader, a brief explanation of the diagram is included in this introduction.

The explanation of the framework diagram begins with the vertical axis that shows five states from organisation, through crisis to chronic emotional impairment. When an individual in a state of organisation is challenged, identified as one of the actions on the horizontal axis, he moves into a state of discomfort, indicated by a solid red line. If he successfully uses existing problem solving strategies, he returns to a state of organisation, indicated by a diagonal broken red line. If the problem solving strategy is unsuccessful, the individual uses another. With each failure of a problem-solving strategy, his emotional state deteriorates, indicated by the solid red line. However if the strategy is successful, he can regain a state of organisation at any point in the decline to crisis, indicated by the diagonal broken red lines.

If no existing strategies are successful, the individual's state becomes one of crisis. Crisis intervention is indicated by the alternative problem solving strategy on the horizontal axis. If this is used successfully, the individual can return to a state of organisation. From the original challenge, into the crisis and then regaining organisation, takes between four and six weeks. However if the alternative strategy fails, the individual goes into a state of chronic emotional impairment, indicated by the solid red line reaching the horizontal axis, and there is no limit to the time an individual can remain in this state.

Primary crisis prevention can form part of crisis intervention when the individual is in crisis, or can happen independently, when he is in a state of organisation, to prepare for a potential crisis. It offers the individual the opportunity to enlarge his repertoire of problem solving skills. Therefore when he is challenged in the future, he is more likely to have earlier success with problem solving and thus prevents a decline to crisis. Instead, he can regain a state of organisation with little emotional discomfort.

5.1 Crisis theory

As the basis for the theoretical framework for the 'study' was crisis theory, it is explained in this first section, as is the justification for crisis theory's inclusion as part of the framework. A general explanation of crisis theory is given and because there is apparent overlap between crisis theory and stress theory, a sub-section offers clarification of the two. There is similar overlap between crisis theory and the theory of grief, therefore a second sub-section gives clarification. Although the 'study' relates to parents of sick and preterm babies, the primary research was with mothers of preterm babies, therefore the third sub-section is devoted to full consideration of crisis and mothers of preterm babies. The summary provides an overview of the crisis theory section of the theoretical framework.

Gerald Caplan was one of the most important contributors to the understanding of crisis. His original research was with children in Israeli institutions after the second world war and disruptions in mother child relationships. Caplan (1960) suggested that individuals usually tried to maintain a sense of equilibrium, physically and emotionally, to be organized. Frequently in life individuals were faced with events or situations that had the potential to challenge or present a hazard. Caplan (1960) concluded that if an individual perceived such events as a significant problem, there was an initial functional emotional response of discomfort, including feelings of distress, anxiety and fear, which ultimately lead to emotional imbalance, a disequilibrium or disorganisation. In an effort to overcome the disequilibrium and revert to equilibrium, the individual used existing problem-solving skills. If these were successful, equilibrium returned and a crisis was averted. Caplan (1960) suggested that this pattern was functional and was followed by most individuals coping with the challenges in life.

However Caplan (1960) also proposed that if the problem-solving skills were unsuccessful, the individual became more disorganized and negative emotions became more severe, impairing logical thought and thwarting further attempts to

problem-solve. The individual was aware of his inability to solve the problem, which further emphasized his incapability. The individual thus was unable to function and was in crisis.

From his original studies, Caplan (1960) suggested that a crisis only lasted four to six weeks but the outcome varied. Some individuals were eventually able to return to the previous state of equilibrium with enhanced problem-solving skills to implement in future potential crises. However other individuals remained chronically emotionally impaired, unable to cope with further challenging situations. In between these extremes, were variations in outcome, some of which were healthy and adaptive, some of which were not.

Caplan's (1960) theory of crisis was convincing, but in the literature there appears to be overlap between crisis theory and stress theory. This overlap has the potential for confusion, particularly when the terms are used inappropriately interchangeably. Therefore clarification of the overlap is given in the following sub-section.

5.1.1 Crisis theory and stress theory

In the transactional model of stress, Lazarus (1966) (see section 2.3.1.1.3) suggested that stressors could be perceived differently by individuals. For some they were very stressful, yet for others they were not perceived as stressful at all. This was similar to Caplan's (1960) suggestion that individuals perceived events in different ways

Maslach (1978) suggested that it was evident that perceptions of significant negative stress and the individual's inability to cope could result in deteriorating emotional and physical health until the situation of burnout occurred (see section 2.3.1.1.3). Burnout usually occurred after a prolonged period of sustained or intermittent severe negative stress. In a crisis, Caplan (1964) suggested that it was primarily emotional health that suffered and the decline in the individual's emotional health was a reaction to the failed attempted problem-solving strategies. Some the signs and symptoms of the GAS (Selye 1950) (see section 2.3.1.1.2), were apparent during

this emotional decline, particularly feelings of anxiety. However, in a crisis, the extent of the emotional deterioration appeared more rapid and more profound than in the negative stress response. In burnout the individual still expressed emotions such as depression, apathy or hostility. However, in crisis, Caplan (1964) found that the individual appeared unable to function. Janosik (1994) concluded that crisis could be considered an "acute variant of stress" (p18), in which the individual experienced so much negative stress, that crisis ensued.

Aguilera and Messick (1986) presented an algorithm of an individual's response to a stressful event based on their interpretation of Caplan's (1964) explanation of crisis. They suggested that when disequilibrium or disorganisation occurred the individual needed to restore equilibrium or organisation. This was considered a functional response. If the individual's perception of the stressful event was realistic and they had adequate support and coping mechanisms, equilibrium was restored. However, if the perception of the event was unrealistic, or there was no adequate support, or there were no effective coping mechanisms, the disequilibrium or disorganisation intensified and a crisis was present.

Aguilera and Messick (1986) viewed Caplan's (1964) hazardous event as a negatively stressful event and referred to the response as emotional disequilibrium. However there was no differentiation between disequilibrium and the negative stress response. In the algorithm two outcomes of disequilibrium were suggested, one outcome of regained organisation and one outcome of crisis. Aguilera and Messick (1986) outlined crisis intervention and suggested that crisis could always be resolved. Therefore, following their logic, it can be concluded that the outcome of a negatively stressful event is always successful with restored equilibrium, whether a crisis occurs or not. This appears rather a simplistic view that fails to take account of the individuality of the stress response, prolonged or recurrent stress, or an individual's option to choose unhealthy stress management. The lack of differentiation between stress and crisis by Aguilera and Messick (1986) does little to clarify these concepts.

As well as the overlap between crisis theory and the theory of stress, there is also apparent overlap between crisis theory and theories of grief. The following sub-section is therefore included for clarification.

5.1.2 Crisis theory and theories of grief

There appears to be overlap between aspects of crisis theory and the theories of grief. The contribution of Lindemann (1944) to the understanding of both of these concepts is considerable. Lindemann (1944) described the pattern of emotions and behaviours exhibited by the survivors and families he was involved with after the Coconut Grove nightclub fire in Boston, in which there was substantial loss of life (see section 3.2). This pattern he regarded as a series of adaptive responses that would lead to resolution of grief. He suggested that grief had to be worked through in order that an individual emotionally disengaged from the dead person, readjusted their life to be without the dead person and ultimately the individual was able to form new relationships. However, Lindemann (1944) suggested that when an individual exhibited extreme grief responses or did not begin to work through their grief or did not work it through in adaptive ways, a pathological or morbid grief reaction could be identified. The suggestion was that the disorganisation triggered by the death led to the inability to work through the grief, thus a crisis occurred. These conclusions were supported by Caplan's (1960) theory of crisis.

Lindemann (1967) suggested that, with variations in degree and time, the usual pattern of emotions and behaviours in grieving was expected and was adaptive. These views were supported by Kubler-Ross (1969) following her studies of patients dying from cancer and their bereaved families, although she presented a five stage process of grieving (see section 3.2.1). She also concluded that if an individual did not begin to work through their grief or did not work through in adaptive ways, a dysfunctional or morbid grief reaction could be identified. Lindemann (1967) suggested that extreme exacerbations of functional grief responses, denied, delayed or chronic grief were examples of dysfunctional or morbid grief. Dysfunctional grief

could lead to crisis. Janosik (1994) suggested that the risk of crisis was most acute in the immediate period after a death or when there was chronic grieving.

Caplan et al (1965) concluded that mothers of preterm babies experienced a crisis when their baby was admitted to a NNU, and that the outcome of their crisis could be healthy or unhealthy. If this conclusion was justified, it would be fundamental to the 'study', therefore the work of Caplan et al (1965) was examined.

5.1.3 Crisis and parents of preterm babies

Having established a theory of crisis (Caplan 1960), Caplan then focussed on crisis and the potential for mental ill health and was particularly interested in the behaviours and emotions experienced during the period of disequilibrium, one of the initial functional responses to hazardous or challenging events. With his interest in preventative psychiatry, Caplan wanted to establish whether there was correlation between any features of disequilibrium and short-term mental ill health outcomes that would aid detection of individuals who were vulnerable to mental ill health. Caplan had concluded that individuals in disequilibrium were aware of their inability to function and they were therefore more amenable to interventions. He speculated that appropriate interventions during disequilibrium were more likely to result in healthier short-term outcomes, i.e. prevent mental ill health.

Caplan collaborated with Mason and Kaplan to study crisis, focussing particularly on parents of babies born preterm (Caplan et al 1965). This population was chosen for study because it occurred sufficiently often to give a reasonable sample size and all instances of preterm birth were recorded, thus a random sample could be selected. All parents of preterm babies were visited by a public health nurse before the baby was discharged from hospital, making access to parents early in the crisis possible, and the onset of the crisis was thought to be easily identifiable as being the onset of preterm labour. Caplan et al (1965) planned to study different degrees of the same crisis and could accomplish this with their chosen sample as some babies

were less sick than others and some parents were less prepared for the birth than others.

Caplan et al (1965) undertook this research assuming that there were several disadvantages in choosing preterm birth as a crisis, although no justification of these assumptions was given. It was suggested that preterm birth was not usually a "...very disrupting crisis...", the outcomes were not likely to be as "...dramatic..." (p151) as in other crises, and there were more likely to be limited alterations in mental health rather than mental ill health, particularly disruptions with the parent baby relationship. However, Caplan et al (1965) considered that the collection of sufficient data to give a theoretical basis was possible, as was the generalisability of the findings to other crises.

The practical convenience of the small sample group and the apparently sweeping assumptions regarding the impact of preterm birth could detract somewhat from the importance of the work. However the series of studies Caplan et al (1965) undertook remain some of the most influential and enduring works on crisis.

Caplan et al (1965) selected a sample of 86 intact families whose baby was born preterm in one hospital setting in Boston, USA. The method of selection was not indicated, although Caplan et al (1965) reported that it was not a systematic selection. The definition of intact was not given but appeared to mean married couples living together. The sample had approximately equal representation from white and black parents from low and middle social classes and the birth weight of the babies was deemed representative by the researchers.

With a first visit between seven and ten days, the interviewers used a structured interview technique and observation with the parents and any other family or friends present, weekly or twice weekly during the baby's hospitalisation and for approximately two months thereafter. By that time, the parents' emotional status

appeared to be stable. This situation fitted with Caplan's (1960) assertion that a crisis lasted four to six weeks.

The interviewers were from a variety of health professions and initially visited in pairs, one to interview and one to observe. The use of two data collectors could be interpreted as an invasion of the privacy of the families. However Caplan et al (1965) reported trying to reduce any intrusion by not tape recording the interviews except for the interviewers' training purposes and requiring the interviewers and observers to document the interviews after the visit was completed. While learning how to interview was essential for this type of research, the training should have been conducted outwith the research situation (Holloway and Wheeler 1996).

Despite having collected data from fathers, families and friends, Caplan et al (1965) chose to focus on the mother and her relationship with her baby. Other information was included only if it was relevant to the revised focus. This strategy appeared unethical as large amounts of data, which were collected from consenting participants, were ultimately unused. It was suggested that this behaviour could be considered as constituting deception on the part of the researchers (Holloway and Wheeler 1996).

The assumption in all of the studies was that preterm birth represented a crisis for the mothers. By reviewing the data from the original sample of 86 mothers, Caplan (1960) purposively selected five mothers who had healthy outcomes from the crisis and five who had unhealthy outcomes from the crisis. A healthy outcome was defined as one in which the relationships in the family were all as good as they had been before the birth. An unhealthy outcome was defined as one in which at least one relationship was worse after the birth. By further analysing the data from these mothers, Caplan (1960) reported that there were patterns in three specific areas of response to the crisis related to the healthy and to the unhealthy outcomes.

Caplan (1960) described the first area of response as the participants' 'understanding' of the crisis situation. Those who had a healthy outcome actively sought information about the baby and his condition and progress throughout his hospitalisation. They had realistic perceptions of what they were experiencing. Those who had unhealthy outcomes did not seek information, appeared to suppress or deny thoughts of how ill the baby was and were unrealistic in their perceptions of what the outcome would be.

'Expression of feelings' was the second area that Caplan (1960) reported. In healthy outcomes, the participants acknowledged their feelings throughout the crisis, with open and honest expression of those feelings. Caplan then referred to the expression of feelings during periods of increased stress in the crisis when participants used denial, suppression and avoidance as temporary coping strategies. Once the stress lessened, they again acknowledged their feelings of anxiety, anger, frustration and depression and concentrated on trying to cope with these feelings. Stress had not been included in Caplan's (1960) report prior to that point and it was interesting to note this overlap between stress and crisis in relation to expressed feelings. For participants who had unhealthy outcomes, there was no outward expression of negative feelings except blaming others. There was inappropriate cheerfulness.

The final area that Caplan (1960) reported was in relation to 'seeking help'. Participants with healthy outcomes actively sought help from a variety of sources to cope with their specific and general feelings and caring for the baby. Some of the support they received helped them counter the maladaptive coping strategies they used. Unhealthy outcomes were linked to not seeking help and refusing offers of help. Couples did not help each other but rather supported each other's maladaptive coping strategies.

Caplan (1960) acknowledged that the study was not designed to establish a causal relationship, and there was no weighting attached to contribution of the behaviours in crisis to the outcomes. Neither was it possible to specifically assess what

contribution was made to the coping strategies and outcomes by the participants' personality. However Caplan (1960) suggested that the three areas of 'understanding', 'expression of feelings' and 'seeking help' could be linked to personality traits and certainly the area of seeking help seemed likely to be linked to the social networks of the families.

Caplan's co-worker, Mason (1963) randomly selected 28 mothers of the original sample of 86 and, based on Caplan's (1960) conclusions, tried to predict the quality of the mother's relationship with the baby at six weeks of life. Different data collectors to those who conducted the original interviews, blind to the predictions, interviewed the mothers within five days of the birth, but after the baby's discharge. They also observed the families' interactions. The interview focussed on the mother's cognitive and affective response to the crisis of preterm birth and what family was available to her for support. These data were then reviewed by a clinical psychologist who was blind to the prediction. A judgement of good or poor was made based on the mother's emotional status, her interaction with and care of the baby, and the baby's progress.

A good outcome was one in which the mother reported her anxiety as moderate to high, and she expressed concerns about the baby's survival and her own competency. She actively sought information about the baby and his care. She had strong maternal feelings for the baby, even if she had not held the baby, and she objected to being separated from the baby. There was mutuality in her relationship with the father. For some mothers there had been a previous successful experience of a preterm baby, either her own or one known to her, that resulted in realistic confidence in her own baby's outcome.

A poor outcome was one in which the mother reported low anxiety related to the baby but expressed more anxiety about other things, as well as some hostility towards the NNU staff. These mothers appeared to leave everything to fate, resigning themselves to what was happening and just waited to hear news of their

baby. They visited the NNU infrequently. Their maternal feelings were less evident, they appeared unaware of the baby's needs and seemed impatient, immature and naïve. For some, the baby was unwanted and others were disappointed with the baby's sex. They had less support from family and there was a tension between the mothers and the fathers.

Only 19 of the sample of 28 mothers had the first and the final assessments made. Of the 11 of the sample of 19 who were predicted to have a good outcome, 10 were judged to have done so. Of the eight of the sample of 19 predicted to have a poor outcome, seven were judged to have done so. While the many limitations of this small study were openly acknowledged by Mason (1963), the predictive quality of the behaviours exhibited during the crisis on mental health outcomes appeared to have been confirmed.

Caplan's other co-worker, Kaplan, had collaborated with Mason (Kaplan and Mason 1960) in the qualitative analysis of the data collected from the original sample of 86 families. They were able to identify four psychological tasks that most mothers appeared to have to accomplish to cope with the crisis and have a positive relationship with their baby. The first task occurred during the preterm labour and was to prepare for the possible death of the baby. Within this first task, the mother had to grieve for the loss of the longed-for baby (see section 3.2.3.1) and then experience anticipatory grief for the baby to whom she was about to give birth (Lindemann 1944) (see section 3.2.3.2), while also hoping for the baby's survival.

The second task was encountered almost simultaneously, as she had to acknowledge that she had failed to give birth to a baby at term. The third task was to begin to relate to the baby to whom she had given birth, and this usually started when she began to realise that the baby would survive. The final task entailed the mother appreciating the differences between her preterm baby and a term baby, how the care had to differ until her baby grew and developed, and also interacting effectively with her baby.

While not setting out to differentiate the mothers in terms of outcomes, Kaplan and Mason (1960) described a group of women who followed a pattern of accomplishment of the four tasks and had an effective relationship with their baby by the time the baby was two months old. They also identified a group of women who did not follow the pattern. Kaplan and Mason (1960) suggested that by failing to accomplish any one of the tasks, accomplishment of the subsequent ones were impeded and the resulting relationship with the baby was likely to be disrupted.

Kaplan and Mason (1960) acknowledged that the response to the crisis of preterm birth could be compounded by other crises before or after the birth. However despite several of the families experiencing other crises during the study, this aspect was not taken into account in the data analysis.

Kaplan (1961) cited by Caplan et al (1965), went on to investigate whether there was any predictive power between accomplishment of the four tasks associated with preterm birth (Kaplan and Mason 1960), and healthy and unhealthy mothering. Kaplan selected 30 women for interview by social workers, blind to any predictions about outcomes. Detailed coding and quantitative evaluation enabled ratings of good, poor or very poor to be made in relation to task accomplishment. Data in case notes were coded and scored by other research assistants and predictions were made as to whether the mothering outcome would be good, poor or very poor.

Chi-square testing indicated an 80% successful prediction rate with 13 of the 18 predictions of good outcomes correct, nine of the 10 predictions of poor outcomes correct and both of the very poor outcomes correctly predicted. Kaplan (1961) cited by Caplan et al (1965), reported that the most predictive factor was the maternal visiting pattern, with more good outcomes evident in mothers who visited at least once per week in the final weeks of the baby's hospitalisation and more frequently in the first weeks of hospitalisation.

The conclusion that Kaplan (1961) cited by Caplan et al (1965), suggested was that there were tasks that must be accomplished during the crisis of preterm birth and if they were, a healthy outcome could be predicted in relation to mother baby interaction and care.

Caplan et al (1965) acknowledged that a causal relationship had not been determined. However in their conclusion to the series of studies, Caplan et al (1965) suggested that it was possible to predict the outcome for the mother and baby relationship based on the behaviours exhibited by the mother during the period of crisis after a preterm birth. They speculated that a disrupted mother infant relationship might lead to personality problems later in childhood. Caplan et al (1965) suggested that if further studies with larger samples supported their findings, it might be possible for health care professionals to intervene to prevent the poorer predicted outcomes in mothers of preterm babies. Interventions would focus on helping mothers to exhibit more positive behaviours and to accomplish the required tasks during the crisis. While these larger studies do not appear to have been conducted, this type of parental support is now considered a routine part of NNU staff's work (Affonso et al 1992). However implementation of support varies and may not always be individualized to meet the needs of the parents (Miles 1989, Affonso et al 1992, Wereszczak et al 1997).

Caplan et al's (1965) contribution to crisis theory included differentiation of the behaviours in crisis, the tasks that had to be accomplished in a crisis and an appreciation of how outcomes of crisis can be predicted. They suggested that the influence of existing personality to the experience of crisis required further investigation to establish whether healthy personalities coped well with crisis and unhealthy personalities did not.

The acceptance of preterm birth and the admission of any baby to a NNU as potential crises have been widely acknowledged. Since Caplan et al's (1965) original studies, there have been many studies of differing designs that have

confirmed and expanded Caplan et al's (1965) findings to include both parents and those whose baby was term and admitted to a NNU (Choi 1972, Harper et al 1976, Jeffcoate et al 1979 a and b, Blumberg 1980, McHaffie 1987 and 1990, Pederson et al 1987, Gennaro 1988, Shields-Poe and Pinelli 1997) (see sections 3.3.1 to 3.3.4).

The findings of Smith et al (1969) and Trause and Kramer (1983) did not support the views of Caplan et al (1965), that NNU admission was a crisis situation. However there were flaws in the design of Smith et al's (1969) study and Trause and Kramer (1983) did acknowledge the negatively stressful nature of such a situation (see sections 3.3.1 and 3.3.3).

As the most widely accepted view is that the admission of a baby to NNU is a crisis, Caplan's (1960) crisis theory was selected as part of a suitable framework for the 'study'. This part of the framework is summarised as follows.

Summary

Accepting the view that the admission of a baby to the NNU is a crisis for parents, the following sequence of events is likely to occur. Initially, when the baby is admitted to the NNU, the parents experience emotional disequilibrium during which a predominant emotion is anxiety. Several problem-solving behaviours will be exhibited by the parents in their efforts to return to an emotional equilibrium. Giving birth to a preterm or sick baby involves the parents in specific psychological tasks, the accomplishment of which is also required to allow the parents to return to an emotional equilibrium. Parents fail to re-establish an emotional equilibrium, their emotional health will deteriorate, they fail to accomplish the necessary psychological tasks and a crisis ensues. Their ability to interact effectively with their baby is likely to be negatively affected in the short term.

The second part of the theoretical framework for the 'study' is crisis intervention theory and in particular the aspect of primary crisis prevention. These are the foci of the next section.

5.2 Crisis intervention theory

In this section crisis intervention theory is explained and the justification for its inclusion as part of the theoretical framework for the 'study' is given. There are three sub-sections. The first describes the development of crisis intervention services, the second explains the nature of crisis interventions, and the third explains primary crisis prevention.

5.2.1 The development of crisis intervention services

LeMasters (1967) described a crisis as sudden event with which an individual was unable to cope. The aetiology of a crisis that Caplan (1960) proposed was used by LeMasters, who suggested that prior to a crisis, there was a level of organization within the individual. After the crisis happened, the individual experienced a period of disorganisation, a period of recovery and then some reorganization. During the period of disorganisation, coping strategies usually had to be used in order that recovery and reorganization occurred.

Murgatroyd and Woolfe's (1982) definition of coping followed from that of Lazarus and Launier (1981). They suggested that coping referred to the way/s in which an individual tried to change or manage the excessive demands made on him/her, whether or not the outcome was successful or not. It was a dynamic process that was dependent on many individual factors, including past experience, personality and social relationships. Murgatroyd and Woolfe (1982) suggested that individuals experiencing crisis might require assistance to deal with the crisis positively in the form of crisis intervention.

From his original work, Caplan (1960) suggested that a crisis usually lasted only four to six weeks, and this assertion was confirmed in subsequent studies (Caplan

et al 1965) (see section 5.1). Caplan (1960) suggested that appropriate crisis intervention was an important part of the support for individuals in crisis, to assist with their healthy recovery from the crisis and for their future emotional wellbeing. Therefore the intervention had to be available to the individual in the early stages of the crisis for it to be effective and for a successful outcome to be achieved. This view supported the conclusions of Aguilera (1994) that if an individual was able to seek help in the period of disorganisation in a crisis, recovery and the restoration of emotional organisation were more likely.

Aguilera (1994) considered that crisis intervention had its origins in the work of Lindemann (1944) who had developed a theory of grieving and had suggested that grief could be a crisis for some. Lindemann (1944) suggested that if bereaved individuals in crisis were assisted to work through their grief in a positive, effective way, the potential for future psychological difficulties could be reduced. Lindemann (1944) considered such assistance as crisis intervention.

In 1946, Lindemann worked with Caplan, to introduce a community mental health initiative through Harvard University in Boston, USA, the Wellesley Human Relations Service (WHRS). As an adjunct to the preventative psychiatry programme of WHRS, in 1948 Lindemann included a crisis intervention service. Through continued collaboration in this project, Caplan developed the theory of crisis and expounded the benefits to the individual of appropriate crisis intervention to prevent mental health problems (Caplan 1964).

Aguilera (1994) traced the history of crisis intervention services. Following Lindemann's lead, crisis intervention projects were developed in North America. However Aguilera (1994) suggested that crisis intervention was not widely accepted as a method of preventive psychiatry. However gradually through the 1960s, it became more acceptable as it was viewed as an alternative to the medical model of intervention.

All the initial projects were developed as part of the psychiatric/mental health services staffed by psychiatrists. In the late 1960s and early 1970s, other institutions such as general hospitals and churches, began to offer crisis intervention services and these were not staffed by psychiatrists. Medical doctors, nurses, members of the clergy and volunteers had successfully trained for, acquired and used crisis intervention skills with vulnerable individuals.

Aguilera (1994) reported that the deprofessionalisation of the crisis intervention services continued, and lay people with some training offered crisis intervention, as evidenced by services such as The Samaritans, Childline and Rape Crisis Centres. The emergence of self-help groups was considered the ultimate deprofessionalisation, where individuals in crisis were helped by ordinary individuals. The Stillbirth and Neonatal Death Society, the Down's Children Association and the many groups associated with serious illnesses or congenital abnormalities are examples of such self-help groups (Aguilera 1994).

Having traced the origins and the development of crisis intervention services, the nature of crisis intervention is explained in the following sub-section.

5.2.2 The nature of crisis intervention

Jacobson et al (1968) suggested that there were two approaches to crisis intervention that were complementary to each other; the generic and the individual approaches. The former is based on the proposal that in a crisis, people generally exhibit certain patterns of behaviour. Lindemann (1944), Kubler-Ross (1969) and Caplan et al (1965) suggested this was the case in relation to the bereaved and parents of preterm babies.

The characteristic pattern of behaviour in specific types of crisis enabled generic interventions to lead to successful resolution of the crisis.

Generic crisis intervention strategies include:

- general emotional support
- encouragement of adaptive behaviours, rather than maladaptive ones
- changing the environment in which the crisis situation is occurring
- anticipatory guidance so that future potential crises can be avoided (Jacobson et al 1968)

There were no details of what constituted adaptive behaviours or what anticipatory guidance entailed. However, Jacobson et al (1968) suggested that the generic approach was easily learned and implemented and was therefore an excellent approach for non-mental health professionals and lay workers to use. This approach has contemporary use in, for example bereavement, disaster, migration or retirement crisis situations (Aguilera 1994).

Affleck et al (1990) suggested that it was the generic approach that was used by NNU staff as they helped parents adjust to the crisis of their baby's admission to a NNU. In section 4.1, there is discussion of the findings of studies that focussed on the negative stressors parents could experience when their baby was in the NNU in which there is evidence of use of the first three strategies Jacobson et al (1968) suggested. It was less clear that NNU staff used the fourth strategy. This strategy is further explored in section 5.2.3.

In contrast to the generic approach, the individual approach to crisis intervention is specifically the domain of the professional mental health worker and is used for individuals who do not respond to the generic approach. The individual's particular needs are assessed and interventions are planned specifically to meet these needs (Jacobson et al 1980).

In their discussion of crisis intervention, Morley et al (1967) proposed that there were four steps in crisis intervention. These steps appear to be the ones Jacobson et al (1968) considered part of the individual approach to crisis intervention. Morley

et al (1967) indicated that the first step was assessment of the situation that had resulted in crisis. If there was any risk of self-harm to the individual, referral to professional help was immediate. If not, the second step involved planning of interventions that would help the individual regain a pre-crisis state of emotional equilibrium. Consideration was given to the individual's strengths, previous and current coping skills, other people who could help, and alternative coping strategies.

The third step was implementation of a variety of interventions that could include the following;

- the individual could be helped to understand that the emotional disorganisation he found himself in was due to a particular situation. Once the individual acknowledged the link, the work towards resolution could start.
- the individual could be helped to recognise and acknowledge suppressed feelings. The resulting catharsis could reduce the severity of the disorganisation.
- the individual could be helped to explore coping strategies that had been used previously but had not yet been used in the current situation, as well as exploration of new coping strategies.
- the individual could be helped to develop new social relationships if the crisis resulted from the loss of someone (Morley et al 1967).

The final step was one in which there was reinforcement of the coping strategies the individual had used and that had led to the eventual resolution of the crisis. Plans for discontinuation of the crisis intervention were made and included discussion of how coping strategies used in the current crisis could be remobilised in subsequent similar situations. The latter aspect is referred to anticipatory planning, also known as primary crisis prevention (see section 5.2.3).

Crisis intervention has been likened to the process of problem-solving, as problem-solving follows a series of steps, one step following on from the other in a logical order. There has been little change in this process of problem-solving since Dewey (1910) suggested the classic five steps of problem-solving. These steps begin with

the experience of a difficulty, followed by identification of the precise nature of the problem. Various solutions are suggested and the advantages and disadvantages of each are considered before a decision is made as to the best solution and this solution is then implemented.

As indicated above, Aguilera (1994) suggested that it was also important to evaluate the solution once it had been implemented, so that the strategy could be used in future with similar problems, that is, anticipatory planning/primary crisis prevention.

Morley et al (1967) suggested that, whether in generic or individual crisis intervention, the person leading the crisis intervention could not know what the best solution for all individuals was, but should be aware of and follow the principles of problem-solving with the person in crisis for successful resolution.

As with crisis theory, there is overlap in the literature on crisis intervention with anxiety. Morley et al (1967) suggested reduction in anxiety was important in the resolution of crisis, whereas Mason (1963) had suggested that the goal of crisis intervention should not be to reduce anxiety but to enable the anxiety experienced to be recognised and used constructively. Constructive use of anxiety meant that adaptive problem-solving skills would be stimulated, disorganisation would be reduced and a crisis averted or coped with more easily.

However Mason's (1963) view is very similar to the third step of crisis intervention that Morley et al (1967) proposed. In this stage the individual is helped to appreciate the source of his feelings or is helped to recognise and acknowledge feelings. Once either has been achieved, the work towards resolution starts.

Janosik (1994) explored the concept of crisis prevention, the aim of which is to reduce the incidence of crisis in populations who are particularly vulnerable. She suggested there were three parts to crisis prevention; primary, secondary and tertiary. Primary crisis prevention has two elements. The first is anticipation of the

variables that might predispose to crisis and alteration of these, thus avoiding the crisis. The second element is to practice coping skills before the crisis so that the skills are easily mobilised if a crisis is possible, therefore avoiding the crisis or reducing its impact. Primary crisis prevention is the part of crisis intervention that forms part of the theoretical framework for the 'study'. It is therefore more fully explained in section 5.2.3. However for completeness in this section the other two parts of crisis prevention that Janosik (1994) suggested are included in this sub-section.

Janosik (1994) suggested that an individual in crisis was amenable to help in the acute phase of the crisis. If none was available, he struggled to regain equilibrium and was then less amenable to help from others. Therefore secondary crisis prevention required the use of crisis interventions early in a crisis situation, in the acute phase. If successful, this strategy reduced the impact of distress to the individual and gave a healthier outcome for the individual.

The interventions in the acute phase included assessment of the coping skills of the individual and the family, with reinforcement of these. Then a mutually agreed plan was developed and the individual and family were encouraged to carry out the plan. Realism was essential throughout.

Groups such as Alcoholics Anonymous use secondary crisis prevention and the success of this strategy is evident by the development of similar groups for other difficult problems, for example, Gamblers Anonymous (Janosik 1994).

The purpose of tertiary crisis prevention Janosik (1994) suggested was to reduce the effect of problems that remained after less effective crisis resolutions, by encouragement of improved social interaction and behaviours. In this way, subsequent crises might be prevented or the subsequent crisis response might be reduced. Families, community groups, and teachers are some of the people who

could offer tertiary crisis prevention through the ways in which they support and encourage individuals who have been in crisis.

Crisis intervention is considered to be either generic or individual Jacobson et al (1968). The interventions include those considered as anticipation and prevention. These are implemented before a crisis and/or after a crisis to try to avoid the crisis and any subsequent crises, or reduce the effects of the crisis. Interventions implemented during the crisis appear to follow the principles of problem-solving. As the focus in the 'study' is on preparation of parents for NNU care, the part of crisis intervention that is most closely linked is primary crisis prevention, also known as anticipatory planning. Therefore the following sub-section explores this aspect in more detail.

5.2.3 Primary crisis prevention / anticipatory planning

As indicated in section 5.2.2, anticipatory planning is usually considered the last part of crisis intervention, however it can also be regarded as a form of preparation for subsequent crisis situations Jacobson et al (1968) and Jacobson et al (1980). If the individual has an increased repertoire of coping strategies that can be implemented in the initial stages of a potential crisis, the crisis can be averted or certainly reduced (Aguilera 1994). Indeed, Kaplan and Mason (1967) viewed crisis as the complex mixture of feelings an individual experienced when he or she tried to deal with an event for which they were not sufficiently prepared.

Janosik (1994) suggested that appropriate crisis intervention influenced an individual's experience of the crisis, assisted in developing effective problem-solving strategies to resolve the crisis, and gave enhanced skills that enabled successful management of future hazardous situations, thus avoiding a crisis. The individual was prepared for the potential crisis and therefore was better able to cope with it.

As discussed in section 5.2.2, Janosik (1994) suggested there were three parts to crisis prevention; primary, secondary and tertiary. Primary crisis prevention appears to overlap with anticipatory planning, and this latter concept is directly linked to the focus of the 'study'. Primary crisis prevention is therefore explained in more detail in this sub-section.

Janosik (1994) considered that, based on clinical, epidemiological or historical knowledge, the potential for crisis occurring in specific situations could be identified, as could the specific variables that required to be moderated. Therefore, the first element of primary crisis prevention Janosik (1994) suggested was identification and moderation of the variables that were likely to result in crisis.

She reported on the excellent example of this first element of primary crisis prevention, the preparation for the admission of a child to hospital (see section 4.2.1.1). This had been identified as crisis situation for the child, mainly related to his fear of the unknown. To reduce the potential for crisis, specific variables were moderated. Moderation included for example, a pre-operative visit to the ward and anaesthetic room, and through play techniques, an explanation of what was to happen and familiarization with the clinical equipment and nursing care. These strategies were shown to be effective in reducing the crisis situation for the child and a policy was developed to ensure this element of good practice was implemented in hospitals nationwide (NAWCH 1990).

The second element of primary crisis prevention Janosik (1994) considered as the reinforcement of existing coping skills. She suggested that this can be achieved by enabling individuals to, for example, role play and rehearse responses to potential crises. Feedback and continued rehearsal of skills can boost self-confidence sufficiently to enable them to be used and avert a subsequent crisis (Janosik 1994).

As was concluded in section 4.2.1.3, primary crisis prevention principles could be applied to the crisis of the admission of a baby to NNU. This situation is regarded as

a crisis for parents, therefore moderation of some of the variables might reduce the impact of the crisis. The variables that parents most often found negatively stressful, and therefore which contributed to the crisis, were identified in section 4.1. Moderation of these variables could take the form of giving parents the opportunity to take a prenatal tour of the NNU and have discussion with NNU staff about what the NNU and having a baby admitted to the NNU were like (see section 4.3.1). If information was given to parents in the prenatal period, it might help to moderate these variables (see section 4.3.2).

Mason (1963) suggested that having experience of a baby in NNU was helpful to the mothers as they had more realistic confidence in the subsequent baby's outcome, if he too was admitted to the NNU. Previous experience of NNU could be considered as linking with the second element of primary crisis prevention, when parents had the opportunity to practice coping skills that they can then more quickly use during a subsequent baby's admission to NNU.

For the purposes of the 'study', prenatal information about NNU care and/or the NNU tour, and previous experience of NNU are considered prenatal preparation of parents for NNU care. Prenatal preparation of parents for NNU care can therefore also be considered part of crisis intervention, that is, as primary crisis prevention/anticipatory planning.

Primary crisis prevention/anticipatory planning can be beneficial. Whether primary crisis prevention in the form of prenatal preparation for NNU care can be beneficial for parents of babies in NNU has not been fully evaluated. This was the justification for the 'study' to determine the effects of prenatal preparation of parents for NNU care. The theory of primary crisis prevention/anticipatory planning, as part of crisis intervention were also therefore considered appropriate for the theoretical framework of the 'study'.

Summary

To guide the 'study', it was important to use a theoretical framework. Most of the studies that have reported the experiences of parents whose baby was admitted to the NNU have concluded that the experience is one of crisis. Indeed an important series of studies in the development of crisis theory was undertaken with mothers of preterm babies in NNU (Caplan et al 1965).

Crisis theory begins with the assumption that individuals try to maintain physical and emotional equilibrium or organisation. When faced with a challenging event that is perceived as a significant problem, the individual feels discomfort, which includes anxiety, and this then leads to emotional imbalance, a disequilibrium or disorganisation. The individual uses existing problem-solving skills, and if these are successful, emotional equilibrium returns and a crisis is averted.

However if the problem-solving skills are unsuccessful, there is emotional decline and further problem-solving becomes impossible. Awareness of this situation adds to the emotional distress and a crisis ensues. The crisis lasts only four to six weeks, with several possible outcomes. For some who are able to use new problem-solving skills, there is return to an emotional equilibrium. Others remain emotionally disorganized, unable to cope with future challenging situations. Between these outcome extremes, there are a variety of outcomes, some healthy and others not healthy.

This framework could be applied to parents whose baby is admitted to NNU, a challenging situation. Their emotional discomfort includes the feeling of anxiety. If parents did not have the problem-solving skills to use successfully, there might be further emotional decline and the crisis could occur. During the crisis there could be disruptions to parent-infant interaction with the potential then for longer term negative consequences for the baby and the parents. A successful outcome to the crisis for the parents, and the baby, may depend on crisis intervention, undertaken by the NNU staff implementing generic crisis intervention principles.

The literature has implied that the crisis for parents whose baby is admitted to NNU is inevitable and that crisis intervention occurs once the crisis has occurred. However primary crisis prevention/anticipatory planning is part of crisis intervention and has been shown to avert the crisis and/or reduce the effect of the crisis. Therefore if primary crisis prevention/anticipatory planning was used with parents prenatally to prepare them for the possibility that their baby might be admitted to the NNU, there might be a reduction in the impact of the crisis, or indeed the crisis might be averted.

If the diagrammatic representation of the theoretical framework applies to parents, it shows how parents might experience the challenge of the admission of their baby to the NNU, indicating the potential outcomes, with and without crisis intervention during crisis (see figure 5.1). However the theory of primary crisis prevention/anticipatory planning, if used as preparation for potential crises, suggests that the outcomes are more positive than if no preparation has taken place. Therefore if parents were prepared for the possible admission of their baby to NNU, their emotional outcomes might be more positive than if no preparation had occurred.

Methods

Chapter 6

Introduction to the methods' chapters

To orientate the reader, this section introduces all six chapters in which the methods are discussed. It includes an explanation of the purpose of the chapters, followed by a summary of the methods used in the 'study', with a flow diagram of the planned methods, and an outline of the content of each chapter.

Purpose of the chapters

The purpose of these six chapters is to explain how the 'study' was planned, with justification of the choices made, and how it was subsequently conducted, with identification and justification of the deviations that had to be made from the original plan. This information will be helpful should replication be considered, but will also help the reader have a clearer understanding of the findings that are reported in chapters 12 to 16.

Summary of the methods

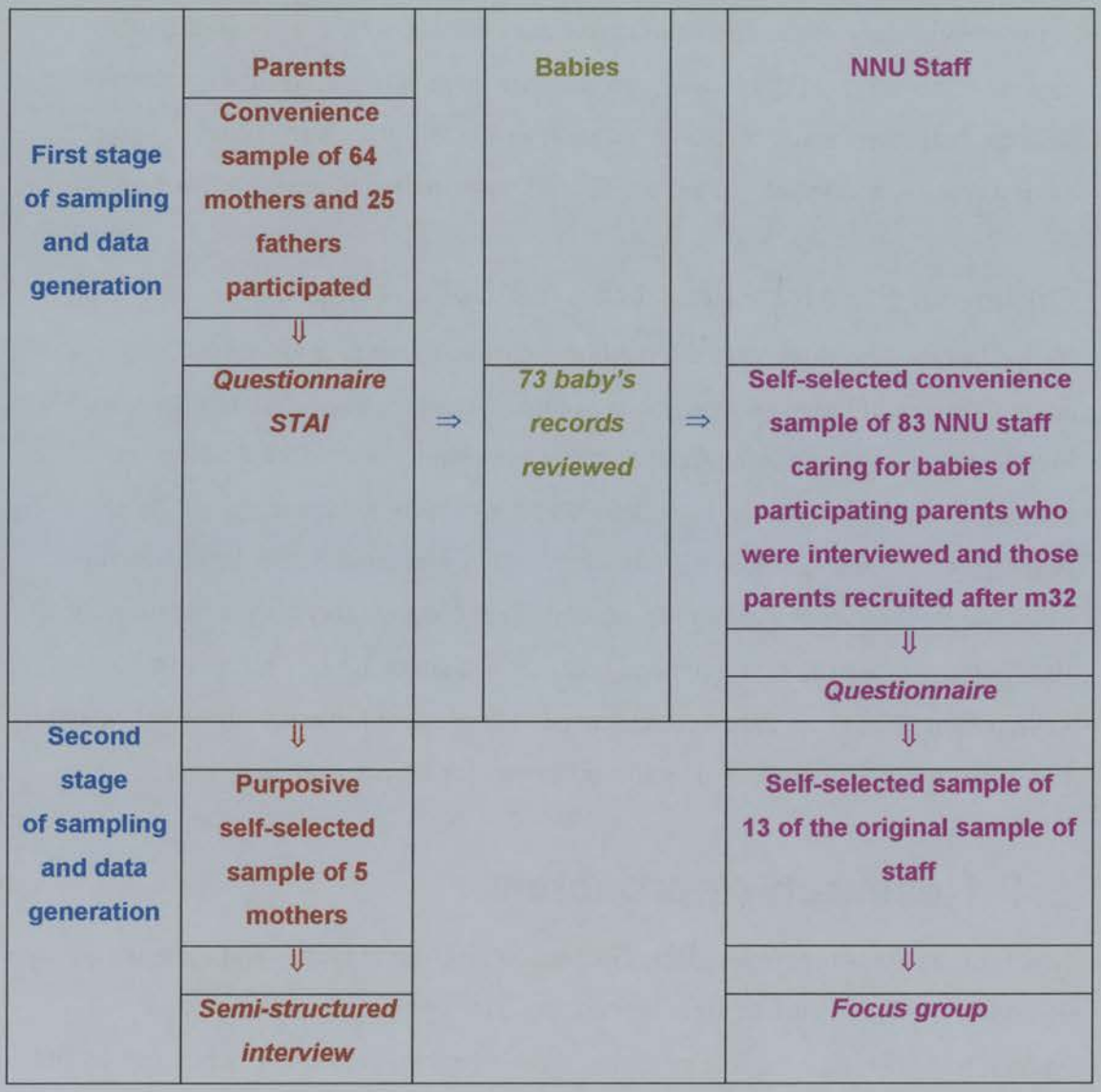
To identify if there was any relationship between the variables of interest in the study, a descriptive, comparative design was used. Implementation of quantitative and qualitative methods generated data that enabled description of the samples and description and comparison of the variables of interest. There were seven main variables of interest in the study. These are listed below for ease of understanding.

1. whether or not parents had received any prenatal preparation for the possibility their baby might require care in a neonatal unit
2. the extent to which parents' perceived needs were met
3. the parents' anxiety
4. the parents' initial contact with their baby in NNU
5. the parents' perceptions about the level of support offered by NNU staff
6. the NNU staff's perceptions about the level of support parents required
7. the NNU staff's perceptions about the parents' preparedness.

Figure 6.1 gives an overview of the types of samples, final sample numbers and data generation methods. An initial convenience sample of 64 mothers and 25 fathers participated in the first stage of data generation with parents. Their 73 babies' records were reviewed. Purposive sampling of the parents with self-selection, enabled the second stage of data generation from five mothers to be completed.

Figure 6.1

Flow diagram indicating types of samples, final sample numbers and data generation methods



A self-selected convenience sample of 83 staff participated in the first stage of data generation from the staff. These were staff who, within the first 48 hours after admission, cared for the babies of participating parents who were interviewed and those parents recruited after the thirty second mother was recruited. A self-selected sample of 13 from the initial sample of staff participated in the second stage of data generation from staff.

Data were generated using a variety of measures with the parent and staff samples. In the first stage of data generation from parents, they were asked to complete a questionnaire and a measure of parental anxiety, the STAI (Spielberger et al 1983). In the second stage of data generation, mothers participated in a semi-structured interview. To augment these data, specific data were extracted from the babies' records. In the first stage of data generation from staff, they were asked to complete a questionnaire and in the second stage, staff were invited to attend a focus group.

Outline of the structure of the methods' chapters

As well as the Introduction to the methods' chapters above, chapter six focuses on an explanation of the main research approaches, qualitative and quantitative, with justification for those chosen for the 'study'. In chapter seven, the descriptive, comparative research design is explained and justified. In the subsequent three chapters, eight, nine and ten, there is focus on the participants, the data generation tools and the procedures in turn. In each of these chapters there is justification for the choices made. The final methods' chapter is chapter 11, in which there is an explanation of how the data were managed. There is a summary within each chapter, but in chapter 11, there is an overall conclusion for the six chapters.

6.1 Research Approaches

Much of the literature reviewed in this section referred to nurses and nursing. However the views and arguments presented also applied to midwives and midwifery. Therefore the reader should recall this dual application when nurses and nursing are referred to.

It has been suggested that nurses should no longer practice using traditional, ritualistic methods of care, as patients may not benefit or may even be harmed. Nurses are recommended to use evidence developed from systematic enquiry in their practice to assure public safety (Walsh and Ford 1989, Hockey 1996). Part of that evidence could come from research, but conducting research that could be classified as nursing research was considered by Hockey (1996) to be relatively new, and she saw the need for more nursing research as urgent. As there are many aspects of nursing that require to be researched, logic suggests that there are many more aspects of neonatal nursing that require systematic enquiry because neonatal nursing is a young specialty. Justified from the literature review (see chapters 2, 3 and 4), as requiring more systematic investigation, the topic of interest in the 'study' is an important aspect of neonatal nursing.

Both quantitative and qualitative research approaches can be used to study aspects of neonatal nursing, depending on the topic of interest. These approaches and the rationale for the choices made in the 'study' are the foci of the following two sections.

6.1.1 Quantitative Approach

Burns and Grove (1993) suggested that this approach to research involved identification and measurement of variables using systematic, controlled processes. The aim of quantitative research was to describe variables in numerical terms, evaluate associations between variables and/or to establish cause and effect relationships (Burns and Grove 1993). Objective techniques allow the collection of data from a sample. Ideally, the sample is a random sample of the population and therefore is representative. Collected data are numerical or can be converted into a form that allows quantification. Descriptive data analysis and inferential statistical testing give rise to an understanding of the focus of the research that can lead to the development of theory. Assuming a representative sample is selected, the results can be generalized to the population. Theories can then be tested using further quantitative research designs and, if experimental research is undertaken, cause and

effect relationships between variables can be established. The predictive nature of the cause and effect relationship and generalisability are suggested as key aims of the quantitative researcher (Polgar and Thomas 1991, Robson 1993, Carter 1996).

It was not possible for random samples to be recruited for the 'study' (see section 7.2). However it was planned that the collection of quantifiable demographic data would enable a description of the samples to be made. This description of the samples could be compared, where possible, with the characteristics of the populations to assess the degree of representativeness of the samples. Had the samples been representative, generalisation of any findings to the populations could have been considered.

There were several variables of interest in the study that were quantifiable and, when quantified, would allow description of these variables in relation to the samples (see Summary of methods). The first quantifiable variables of interest was whether parents had received any prenatal preparation for the possibility their baby might require care in a NNU or not. It had been reported that midwives offered information about NNU and possibly a tour of the NNU (Greig 1998). In the 'study', the 'researcher' wanted to establish how many of the sample of parents had experienced what forms of preparation and from whom, including how many parents had previous experience of NNU. No evidence could be located in the literature as to the preparedness of parents for admission of their baby to NNU. Therefore being able to describe a sample in terms of preparedness would give new insight into parents of babies in NNU. A quantitative approach would allow this type of description and was therefore an appropriate approach to use.

The second quantifiable variable of interest was the parents' anxiety. The anxiety of parents whose baby was in NNU had been quantified in previous studies (Choi 1972, Harper et al 1976, Blumberg 1980, Trause and Kramer 1983, Pederson et al 1987, Gennaro 1986 & 1988, Gennaro et al 1990, Gennaro and Stringer 1991, Shields-Poe and Pinelli 1997). However literature could not be located in which this

measurement had been related to preparedness. A quantitative approach would enable the characteristics of any relationship between the parents' preparedness and their anxiety to be explored and reported for the first time.

The third, fourth, fifth, and sixth quantifiable variables of interest in the study were the parents' initial contact with their baby in NNU, the perceptions of parents about the level of support offered by NNU staff, and the perceptions of NNU staff about the preparedness of parents, and the level of support they required from NNU staff. It was also hoped to be able to explore any relationships between these variables using the quantitative approach.

No data on the perceptions of NNU staff about the preparedness of parents were located, nor was information about any relationships between all four variables. A quantitative approach would enable the 'researcher' to describe the sample in relation to these variables and report any relationships between them for the first time.

Carter (1996) suggested that, as theory development and testing continued using quantitative techniques, the understanding of the focus of research deepened but also became broader. Quantitative research is often regarded as being reductionist. A whole is reduced to its parts and quantitative studies are undertaken on the parts. As the parts are understood, the whole becomes more understandable (Carter 1996).

The experience of parents whose baby was cared for in a NNU is a topic that can be considered as a whole. Researchers have broken and continue to break this whole into parts that can be explored more specifically using quantitative approaches. The 'study' focused on a small part of this whole, the preparedness of parents for NNU care, therefore it was appropriate to use a quantitative approach.

It is recognized that in the majority of studies, the researcher influences the research situation (Polit and Hungler 1989). This influence is potentially a source of bias that

may invalidate the findings. Objectivity was one way of reducing bias due to researcher influence and, as a key feature of quantitative research, can be achieved by the researcher in several ways (Burns and Grove 1993). To achieve objectivity, the quantitative researcher must try to avoid influencing the participants with personal views (Robson 1993). This aspect is particularly important in the development of data collection tools, where the bias of the researcher can be easily introduced. This has been considered in the 'study' and is addressed in chapter nine.

Also to reduce bias, the tools used in quantitative research are usually structured and demand little or no interaction between participant and researcher during their completion (Carter 1996). Structured tools that required little interaction were employed in the 'study' (see chapter nine).

Elements of the control used in experimental designs can be applied in other quantitative designs to reduce researcher influence (Burns and Grove 1993, Robson 1993). Attempts were made to control the research situation in the 'study' (see chapter 10).

6.1.2 Qualitative Approach

The qualitative approach is often viewed as ideal when little is known about a topic (Robson 1993). Hockey (1996) suggested this made it an ideal choice in nursing research where so much still had to be explored. The qualitative approach focuses on the views and perceptions of individuals, searching for reasons behind their behaviours or motivations so that understanding is enhanced (Porter 1996). Therefore it is also a useful approach to use to gain new insights into established situations (Holloway and Wheeler 1996).

The qualitative approach has its origins in anthropology, sociology and philosophy, with studies of people in their natural settings, whether in remote civilisations and cultures or in the developed world (Holloway and Wheeler 1996). As the qualitative approaches developed from these bases, ethnography, grounded theory and

phenomenology respectively, they became more defined. Each of these approaches is explained in relation to nursing in the following sections. The rationale for rejecting two of these approaches and justification of the choice of the qualitative approach for use in the 'study' will be given.

6.1.2.1 Ethnography

Ethnography, with its basis in anthropology, focuses on descriptions of groups, interactions, behaviours, perceptions, processes or systems (Aamodt 1991, Holloway and Wheeler 1996). The researcher becomes immersed in the situation being studied and data are collected from key informants usually by participant observation and interviews (Aamodt 1991). The data, giving the view of the participant, are analysed and compared to the researcher's own field notes and analytic comments. Further data are collected and the process continues. Gradually a picture and interpretation of the focus of the research develops and can be reported as a credible account of what 'is', as experienced by the individuals within the setting (Aamodt 1991, Holloway and Wheeler 1996).

It is known that in the majority of studies, the researcher influences the research situation (Polit and Hungler 1989). This influence is a potential source of bias and could invalidate the findings. In quantitative research, objectivity is employed to reduce the potential for bias (see section 6.1.1). However, in qualitative research, the researcher must become involved with the participants and thus subjectivity predominates. While subjectivity can be viewed negatively as possibly increasing the potential for bias (Polit and Hungler 1989), others have suggested that this subjectivity is an essential element of the qualitative approach (Aamodt 1991, McHaffie 1987 and 1990, Oakley 1979 and 1981b). The qualitative researcher therefore reflects on their own experiences, views, motivations and assumptions related to the research topic and acknowledges how these might influence the study (Aamodt 1991).

Such reflection is important for ethnographers to undertake before and during the research process, but their interpretations of the research situation are important as data are collected and analysed. The ethnographer moves between the emic data and their own etic perspective, exploring any differences between them, as they try to interpret the research situation (Holloway and Wheeler 1996). The resulting ethnography is the researcher's interpretation of the participants' views or situations (Aamodt 1991, Robson 1993).

Although not described as such, in her study Oakley (1979) (see section 2.3.4.1), appeared to incorporate aspects of the ethnographic approach to describe the experiences of first time mothers. Her interpretation of their experiences is presented as a description from the participant's viewpoint, one that was verified by them. This, Werner and Schoepfle (1987) suggested, is one of the aims of ethnography. Oakley (1979) also took account of the social context of the participants that Aamodt (1991) considered an important aspect of the ethnographic approach.

In the 'study', the 'researcher, could not become immersed in the situation of parents during and immediately after their baby's admission to the NNU. This would have been physically impossible due to time and financial constraints. It would also have been an excessive intrusion by the 'researcher' into a potentially anxiety provoking situation for the parents that could not be justified. However the main reason for rejecting this research design was that the aims of ethnography outlined above, did not match the objectives of the 'study'.

6.1.2.2 Grounded Theory

With its basis in sociology, grounded theory was initially used in a study of the interaction of health care professionals with dying patients (Glaser and Strauss 1965), and has been widely used in health care research since the 1960s. It offers the opportunity for the description of the area of study, with an account of the relationships within the data, but also the development of theory. The predictive

power of the theory generated from this approach sets grounded theory apart from ethnography and phenomenology (Strauss and Corbin 1990).

The area of any research is usually of interest to the researcher who has an understanding of the existing knowledge of the area. Stern (1980) suggested that grounded theory was a useful approach when there was little known about a topic. These criteria applied to the 'study', as it was known, through the review of the literature, that prenatal preparation for NNU care had not been explored (see section 4.2.1.3).

However the researcher who uses grounded theory suspends personal ideas, preconceptions, and previous theoretical bases prior to data generation in order that their etic view does not interfere with the approach to the investigation (Holloway and Wheeler 1996). This was not possible in the 'study', as a theoretical framework had been selected for use (see chapter five) and the literature about parents' experience of NNU was well known to the author. This depth of pre-knowledge does not comply with the grounded theory approach and therefore the grounded theory approach was not considered appropriate for the 'study'.

As in all qualitative approaches, data generation and analysis interact in the grounded theory approach (Benton 1996). Data are usually generated through observations and unstructured interviews, although other data sources such as diaries and documents can be used. The researcher begins to analyse the data as soon as they are collected and develops a coding system for emerging themes to organize the data. The emerging themes guide further data collection. Subsequent data are analysed and coded and, through a process of constant comparison, the original themes are modified, developed and grouped into categories (Benton 1996). Reference to the literature can modify and validate the process of analysis and further data generation, as well as stimulating further questions and guiding the sampling technique (Strauss and Corbin 1990).

Strauss and Corbin (1990) and Morse and Field (1996) suggested that the literature can also be a source of data. Themes and categories derived from the data are compared and contrasted with those identified in the literature, the review of which is prompted by each stage of the analysis. This process broadens the scope of the data collection. From the analysis and identification of possible relationships, working hypotheses are developed and these are tested as further data are collected. The researcher clearly looks for data that support these hypotheses, but also seeks data that refute the hypotheses. If such data are found, the hypotheses are modified or an explanation is given for the deviance (Morse and Field 1996).

In the final stage of the grounded theory approach, the production of theory occurs. The theory can be termed 'substantive', in that it applies to the specific situation studied in the project (Glaser and Strauss 1967). Alternatively the theory can be termed 'formal', in that it is applicable to other settings and situations (Glaser and Strauss 1967, Holloway and Wheeler 1996).

It is recommended that in the grounded theory approach, a theoretical sample is recruited according to the ongoing analysis of the data (Holloway and Wheeler 1996). This sample is not pre-planned, but develops as the theory emerges (Strauss and Corbin 1990, Benton 1996). This sampling technique was not possible in the 'study', given the objectives, and the constraints of time and access to the population, therefore the approach was rejected.

Rejection of the grounded theory approach was also justified because, although preliminary stage description and analysis were objectives of the 'study', theory generation was not. It was noted that of all the studies located on parents' feelings (see section 3.3), none had used a grounded theory approach.

6.1.2.3 Phenomenology

Phenomenology has its roots in philosophy and is concerned with the study of phenomena, of the lived experiences of participants. From a detailed historical

review, Holloway and Wheeler (1996) described the development of phenomenology through three phases with different conceptualisations, resulting in phenomenology being thought of in three schools. The first aims to give deep and detailed description of phenomena, the second concentrates on interpretation of the phenomena, and the third is a combination of description and interpretation. The resulting phenomenological description or/and interpretation is expected to be realistic to the participants and can be recognized by non-participants who have experienced similar situations (Anderson 1991, Holloway and Wheeler 1996).

Beck (1994) reported that phenomenological studies in nursing explored the lived experiences of patients in a wide range of situations, although none were specifically related to the topic of the 'study'. Streubert and Carpenter (1995) suggested that phenomenology was suited to research in nursing because of the holistic approach to individuals in both phenomenology and nursing. The objectives of the 'study' (see section 1.5.1) appeared to fit with the phenomenological approach.

Holloway and Wheeler (1996) clearly outlined the data generation and analysis processes in the phenomenological approach. The data are usually generated via semi-structured interviews or other narrative sources that focus on the phenomenon in which the researcher is interested. The researcher should not contaminate the data generation with personal views and preconceptions. Analysis of the data follows a systematic process, as in ethnography and grounded theory. The data are read to allow the researcher to develop a basic understanding of them. Words or statements that are related to the phenomenon are highlighted and meanings are formulated for each. At this stage, the researcher's existing knowledge and understanding are helpful in developing these interpretations. As data generation continues, the meanings are clustered together as themes. The researcher validates the themes from the data and identifies themes that contradict each other. A full description or/and interpretation of the phenomenon can then be formulated from which the essence of the phenomenon is derived. The researcher then validates the findings with the participants (Holloway and Wheeler 1996).

The objectives of the 'study' included describing and interpreting the experiences of parents when their baby was admitted to the NNU in respect of prenatal preparation, anxiety, their needs, initial contact with their baby, and levels of support required from NNU staff. They also included describing and interpreting the experiences of NNU staff in relation to the parents' preparedness and the level of support they required from NNU staff. Therefore the descriptive and interpretative aims of the phenomenological approach appeared to match the objectives of the study.

Within the phenomenological approach, purposive sampling is required to recruit relevant participants for interview (Anderson 1991), and initially, this seemed possible in relation to the parents within the time and access constraints of the 'study'. There would be a potentially large sample of parents from which to choose the most relevant possible recruits, i.e. those parents who had been prepared, those who had been prepared in different ways, and those who were not prepared.

A semi-structured interview could be undertaken with each consenting parent, and the data generated could be analysed using the guidelines given by Holloway and Wheeler (1996). While the views and preconceptions of the researcher could be suspended in the interview, it was appropriate for these to be part of the data analysis process, as indicated by Anderson (1991). The only data analysis guideline that could not be fully included in this study was the validation of the description and interpretation of the phenomenon with the participants. This was because it was impractical for the 'researcher' to access the participants on repeated occasions. This was seen as an important limitation of the design that would reduce the validity of the findings (Robson 1993). However, this limitation was recognized and to try to overcome it, the 'researcher' tried to make mini-summaries of what mothers said during the interviews. These summaries were then reflected back to the mothers during the interviews for them to confirm or correct the interpretations of the 'researcher'. In this way the mothers' perspectives were more clearly understood by the 'researcher'.

However, the main method of trying to overcome this limitation was that triangulation of data generation methods was incorporated into the research design (Knafl and Breitmayer 1991). It was envisioned that the description and interpretation arising from the phenomenological analysis could then be augmented by the quantitative analysis and vice versa to try to give a fuller description and interpretation of the parents' experience. This technique was in line with the interpretation of triangulation offered by Knafl and Breitmayer (1991) in which different data collection methods were used to generate more complete data. Knafl and Breitmayer (1991) suggested that the data generation methods were not chosen randomly in triangulation, but were selected so that the strengths of one negated the weaknesses of another. This was the strategy used in the 'study' and it is discussed more fully in the section on data generation tools (see chapter nine).

It was impractical for the 'researcher' to purposively sample NNU staff and hold individual interviews with NNU staff, therefore it was not possible to use the phenomenological approach to meet the objectives of the study related to staff. However, it was planned to collect qualitative data from staff during focus groups (see section 9.3.2). These data would be analysed using the principles of qualitative analysis and the findings would augment the quantitative data analysis in relation to staff. The triangulation strategy was again planned to allow the 'researcher' to develop a fuller and deeper understanding of the experiences of staff, but also allowed the weaknesses of the data collection methods to be reduced by their strengths (Knafl and Breitmayer 1991) (see chapter nine).

It was noted that in the review of the studies on parents' experiences of NNU, none had used a named phenomenological approach, although some of the work of McHaffie (1987 and 1990) appeared to incorporate some elements of this approach.

Summary

In this chapter justification of the choices made in relation to the quantitative and qualitative approaches in the 'study' was given. While there was some discussion of the quantitative design, more detailed discussion is found in chapter seven. In this chapter there was discussion of the possible qualitative approaches with the specific type, phenomenology, justified for use with parents. A rationale was also given for generating and analysing qualitative data from NNU staff using the principles of the qualitative approach. The importance of triangulation of data generation methods was also addressed.

Methods

Chapter 7

Research Design

Introduction

Within the framework of the quantitative and qualitative approaches, a descriptive, comparative design was chosen. The rationale for the descriptive and then the comparative elements of the design will be discussed in this chapter.

7.1 Descriptive Design

According to Carter (1996), descriptive research enables the researcher to discover facts about particular situations, people or their actions that have not been previously identified. As with other research designs, descriptive research demands that a systematic process is followed in order that the facts discovered are unbiased and valid. Through analysis of the facts, new insights into the study's focus can be described, along with any relationships found within the data.

The description of the "phenomenon of interest" (Carter 1996 p180) that results from descriptive research should be full, detailed and possibly used in several ways. The detailed description of the situation is an obvious use, and using the description as a baseline from which to develop or change the phenomenon, is also an appropriate consequence. The description is also the basis on which experimental research can be built, developing and testing related hypotheses (Carter 1996).

Some authors equate descriptive research with a survey design, and use the terms interchangeably (Couchman and Dawson 1990). However, others view descriptive research more broadly, and include other designs within the overall heading of descriptive research. Carter (1996) included survey, exploratory descriptive, simple descriptive, comparative descriptive, case control and case study designs as descriptive research.

Exploratory descriptive designs are specifically undertaken when there is very little or no knowledge or understanding about a particular phenomenon. In this situation, Porter (1996) suggested that qualitative research designs could be used. As these criteria were applicable to the 'study', the phenomenological approach was again justified. However, Carter (1996) argued that a quantitative approach might also be appropriate in this type of situation. Therefore the phenomenological approach combined with a quantitative descriptive design appeared justified.

The literature review reported in section 3.3, revealed that there were many previous studies that described the feelings of mothers when their baby was in NNU. However only some collected data exclusively in the immediate period after the baby's admission (Smith et al 1969, Choi 1972, Blumberg 1980, Gennaro 1986, Gennaro and Stringer 1991, Shields-Poe and Pinelli 1997). Of these, it was noted that only Shields-Poe and Pinelli (1997) included fathers in the sample.

Choi (1972) and McHaffie (1987 and 1990) were the only researchers to generate qualitative as well as quantitative data, all the other studies included in section 3.3, used quantitative methods alone. All of the studies reviewed in section 3.3 explored parental feelings, including anxiety, although anxiety was not an exclusive focus. The feelings of NNU staff and the amount and nature of support parents needed and staff offered appeared to have been insufficiently explored. No studies could be located in which NNU staff views and perceptions with respect to parents' preparedness and the level of support they required had been elicited.

There were therefore several gaps in knowledge that required to be filled and for which an exploratory descriptive design using quantitative and qualitative elements would be suitable. Using such a design, a description of the characteristics of the variables of interest in parents and staff could be made by the 'researcher' (Carter 1996).

7.2 Comparative Design

When the design of the 'study' was being developed, consideration was given as to whether the experimental approach would answer some of the research questions. The arguments that were considered follow, and explanations are given as to why the experimental design was rejected in favour of the comparative design.

Some of the variables of interest in the 'study' had been investigated to some extent by previous researchers (Choi 1972, Harper et al 1976, Blumberg 1980, Trause and Kramer 1983, Pederson et al 1987, Gennaro 1986 & 1988, Gennaro et al 1990, Gennaro and Stringer 1991, Shields-Poe and Pinelli 1997). Therefore research hypotheses could have been developed and an experiment undertaken. The specific variables were prenatal preparation of parents and parents' perceived needs, parent's anxiety, parents' initial contact with their baby in neonatal units and the perceptions of parents about the level of support offered by neonatal staff. Following data analysis, a cause and effect relationship could have been established or refuted (Burns and Grove 1993) between parental preparedness and realistic parental needs, a lower level of anxiety, increased contact with their baby and less initial support from NNU staff.

However the experimental method demands that the independent variable be manipulated for at least one group from the sample, preferably a random sample, under controlled conditions (Burns and Grove 1993). These conditions could not be achieved for this 'study' and the reasons are explained in the following paragraphs.

If the independent variable had been defined as the prenatal preparation of parents for NNU care, manipulation of the independent variable would have been necessary. This would have involved organizing specific preparation to be given by midwives to randomly selected women and their partners (the experimental group), while other women and their partners would not have received such preparation (the control group), even if the midwife would normally have done so. A survey (Greig 1998) had

shown that the majority of midwives sampled reported that they did offer some prenatal preparation about neonatal care, especially to women and their partners who were at high risk. Therefore it would have been unethical not to offer prenatal preparation, as this was the norm.

Had the 'researcher' been able to organize manipulation of the independent variable, the services of many midwives would have had to be agreed so that the midwives could undertake the preparation of the experimental group. Controlling the information to be shared with women and their partners would have been complicated because of the large number of midwives who would have been involved. This lack of control could have led to bias within the 'study', potentially invalidating any results (Robson 1993). More control would have been achieved had the 'researcher' been able to offer prenatal preparation exclusively. However, this strategy was not feasible.

Identification of mothers in the prenatal period whose babies would be admitted to NNU would have been possible, but only for specific categories of mothers or babies. For some mothers, categorization as high risk could have been made from conception, e.g. an insulin dependent diabetic mother, but the assumption that the baby would have been admitted to the NNU could not be made. For other mothers, categorisation as high risk might have occurred just prior to the birth, e.g. a mother who experienced a massive placental haemorrhage. In both examples, randomization into the control or experimental group would have been impossible prenatally and thus these mothers and their partners would not have participated. This would have restricted the diversity of the sample and therefore the generalisability of any findings.

Some parous women attend for prenatal preparation, but the majority of women who attend are primigravidae. Had it been possible to select an experimental group, it would therefore have consisted mainly of primigravidae and the matched control group would also have consisted of mainly primigravidae. The exclusion of parous

women whose previous baby had perhaps been in NNU and parous women experiencing a first admission of their baby to NNU would have narrowed the scope of the sample and therefore the generalisability of any findings.

For these reasons, it would have been impossible for the 'researcher' to recruit a sufficiently large and diverse random sample of parents whose baby was actually admitted to NNU within the restricted time frame possible for data collection. Therefore the experimental design was rejected.

Consideration was given as to whether the quasi-experimental design would have been appropriate. A quasi-experiment would have allowed recruitment of a convenience sample that could have been stratified after recruitment, but the inability of the 'researcher' to effect manipulation of the independent variable would have negated the design being a quasi-experiment (Polit and Hungler 1989, Burns and Grove 1993, Robson 1993).

In situations when the independent variable cannot be manipulated, Hicks (1996) suggested that a comparative or a correlation method be used.

In the 'study', there was also interest in whether there was any relationship between NNU staff perceptions of parents' preparedness and the support parents required and the parents' perceptions of staff support. As none of these had been the focus of previous research, an experiment would have been an inappropriate design (Carter 1996). For an initial understanding of these variables, an exploratory descriptive design would be appropriate and the comparative element of the design would offer the opportunity to explore any of the relationships identified. Experimental research could be conducted in the future on these variables.

Therefore as neither an experimental nor a quasi-experimental method could be used, a comparative method was considered a feasible alternative to try to meet the objectives of the 'study' and answer the research questions (Robson 1993).

Comparative methods allow comparison of variables to assess whether there is any association or relationship between them. A cause and effect relationship cannot be inferred, simply that there may or may not be a relationship. The descriptive comparative method is considered an ideal method to use when describing and comparing variables in two or more groups (Carter 1996). In the 'study', the variables of preparedness and staff support were to be examined from the perspective of mothers, fathers and the staff, therefore the comparative method would be suitable to use.

One aspect of comparison, correlation, could help explain how one variable was related to another or not, and the extent or degree of any relationship (Carter 1996). Again, correlation between variables does not imply a cause and effect relationship, just that there is a relationship or not. In the 'study', prenatal preparation might or might not be related to state and/or trait anxiety, or state and/or trait anxiety might or might not be related to prenatal preparation, or they might both be related to another unknown variable.

However a significantly correlated relationship could allow inferences to be made about the relationship, i.e. if a relationship is significantly correlated, it is likely that this relationship pattern would be repeated (Hicks 1996). Therefore if a strong negative correlation between prenatal preparation and the level of parental anxiety is identified in a representative sample, it is likely that this relationship would be repeated in other members of the population. This finding would be useful for planning midwifery and neonatal nursing care.

As indicated above, previous studies have measured feelings, including anxiety, and explored mothers' perceptions of aspects of their baby's care in NNU. However no previous studies could be located in which these variables were compared or in which correlation was tested.

Therefore in the 'study', the following variables were compared.

- parents' state and trait anxiety
- prenatal preparation
- the extent to which parents' perceived needs were met
- parents' initial contact with their baby in NNU
- the perceptions of parents about the level of support offered by NNU staff
- the perceptions of NNU staff about the level of support parents required
- the perceptions of NNU staff about parents' preparedness.

The variables that were explored for correlation were:

- parental state with parental trait anxiety
- parental state and trait anxiety with prenatal preparedness.

Summary

In order to answer the research questions, a descriptive comparative design was chosen for this 'study'. The justifications for the descriptive comparative design have been given. In this chapter there were also explanations for discounting alternative designs.

Methods

Chapter 8

The Participants

Introduction

In this chapter, there are five sections. The first gives an explanation of the choices made in relation the sampling techniques. In the second there is an explanation of the power analysis used to calculate the numbers of mothers and fathers required. The third, fourth and fifth sections focus on parents, NNU staff and babies respectively. In each of these three sections, there is an explanation of recruitment and inclusion criteria where appropriate. Although in chapter 10, there is discussion of the procedures of the 'study', some details of the execution of planned recruitment strategies and explanation of why they were, in part, unsuccessful, are included in this chapter for completeness.

8.1 Sampling techniques

The recruitment of fathers, babies and staff depended on which mothers consented to participation and options for sampling techniques were explored. The possible sampling techniques for initial recruitment of the mothers are discussed first.

In section 7.2, it was concluded that random sampling was not possible for recruiting the sample of mothers. Therefore non-probability sampling strategies were explored for their suitability. Quota sampling was considered. Categories of interest in the parents included prepared and unprepared, and those parents prepared in different ways. Therefore a sampling frame could have been devised that allowed for specific numbers of mothers in each category to be recruited (Robson 1993). However, the information about preparedness would not be available before contact with the mothers had been made, therefore there was the potential for unwarranted contact with mothers during an emotional time for them. For these reasons, quota sampling was deemed unsuitable for the initial sample of mothers, as were all its derivatives of dimension and purposive sampling (Robson 1993).

Because of the constraints of time and availability, convenience sampling was considered the most achievable option. Convenience sampling has limitations, the most important of which is that the sample recruited may or may not be representative of the population (Hicks1996). Recruitment of a biased, unrepresentative sample limits the generalisability of the findings. Robson (1993) indicated that often with research with humans in the clinical situation, a convenience sample is the only choice. However, Robson (1993) suggested that if convenience sampling is undertaken, awareness of the limitations and making attempts to reduce these are relevant.

Therefore in the 'study', as large a sample of mothers as was required, based on power analysis, was recruited (see section 8.2). Having informed parents of the 'study', all participating mothers consented freely (see section 10.2.1 and Appendices 4 and 5). The likelihood of a spread of characteristics is increased with larger samples (Hicks 1996). The NNU in which the 'study' was conducted had already been established as one in which it was possible to access an appropriate cross-section of the relevant population of parents (McHaffie 1987 and 1990). However when possible, the characteristics of the sample of mothers were also compared to the population to assess whether there was sampling bias. This comparison was also made with the samples of fathers, babies and NNU staff (see sections 12.1.1, 12.3.1, 12.4.1 and 16.1). Robson (1993) suggested that non-participation could also introduce bias in a sample, particularly with convenience sampling. The non-participants were part of the population, therefore the comparisons made between participants and non-participants could help determine if bias was present (see sections 12.1.1, 12.3.1, 12.4.1 and 16.1).

It was planned that the recruitment of mothers would lead to access to the population of fathers, babies and NNU staff and the technique would be of convenience sampling (see sections 10.2.1 and 10.3.1). Having been informed of the 'study', fathers and NNU staff consented to their participation (see Appendices 4, 5, 6 and 7). A sample of all of the records of babies of participating mothers was possible as

the mothers consented to access to their baby's records when they consented to their own participation (see section 10.2.1 and Appendix 5).

Following decisions being taken about the initial sampling, the techniques used to recruit parents and staff to the second stages of data generation were considered and are explained in the following paragraphs.

It was planned that once the samples of mothers and fathers had been recruited, it would be possible to determine the nature of any preparation for NNU they had experienced. Knowing these criteria, it would then be possible to use purposive sampling (Robson 1993) to recruit parents to participate in the second stage of data generation. Purposive sampling would allow selection of prepared and unprepared parents and those who had been prepared in different ways, thus helping meet the specific objectives of the 'study'. If invited to participate because they suited the purpose of the 'study', parents would choose whether to consent to participation or not, i.e. self-select (see section 10.2.2 and Appendix 8).

Each of the members of the convenience sample of NNU staff would be invited to participate in the second stage of data generation, self-selecting to consent to do so or not (see section 10.3.2 and Appendices 9 and 10).

Self-selection as an extension of convenience sampling, also has the potential for bias. The participants and the non-participants may have different perspectives resulting in skewed results (Robson 1993). To try to assess possible bias, comparisons between the participants in the sub-samples and the samples would be made.

Summary

Despite its limitations, convenience sampling was chosen as the sampling technique for recruitment of mothers, fathers and NNU staff to the first stages of data generation. All the records of the babies of participating mothers were sampled.

Purposive sampling was used to select the sample of parents to participate in the second stage of data generation. A small proportion of mothers self-selected to do so. Each of the members of the convenience sample of NNU staff was invited to participate in the second stage of data generation. A small proportion self-selected to consent to do so. The potential for bias with the sampling techniques was limited as far as was possible.

The number of mothers and fathers who were required to be recruited was computed by power analysis (Polit and Sherman 1990), and this is the focus of the next section.

8.2 Power Analysis

Power analysis is a statistical technique used to calculate the likelihood of a type II error (Burns and Grove 1993). More commonly it is described as being used to determine the most appropriate sample size in quantitative designs, particularly in experimental designs (Polit and Sherman 1990). As the main quantitative dependent variable in the 'study' was parental anxiety, it was selected as the most appropriate variable on which to compute the power analysis. Had the 'study' been experimental, power analysis would have allowed computation of the number of parents that would be required to detect if there was any effect on the dependent variable caused by the independent variable (Polit and Sherman 1990).

The 'study' was not experimental, however the power analysis allowed computation of the number of parents that would be required to detect if there was a difference in parental anxiety between prepared and unprepared parents (Polit and Sherman 1990).

Before computation of the power analysis to determine the sample size, it is suggested that three elements should be established if possible (Polit and Sherman 1990, Burns and Grove 1993). The first was an estimate of the size of the effect. Although the design of this 'study' was non-experimental, therefore cause and effect

could not be established (Hicks 1996), an estimate of the size of the effect was calculated for the power analysis.

It was concluded in the literature review (see section 4.3), that if a relationship between the independent and dependent variables was identified in relation to anxiety, that it was likely to be that parents who had no prenatal preparation would be more anxious than parents who had some prenatal preparation. In this case, the size of the effect that needed to be quantified was, 'more anxious'.

The tool used in the 'study' to measure anxiety was the STAI (Spielberger et al 1983)(see Appendix 11). A more complete description of the tool is included in section 9.1.2.7, but it is necessary to include a brief explanation in this section in order to quantify 'more anxious'.

The STAI consists of two inventories with 20 items in each. Completion and scoring of the first 20 inventory items enables measurement of the state score, i.e. an estimate of the anxiety of an individual when experiencing a potentially anxiety provoking situation. In the 'study', the potentially anxiety provoking situation was the admission of a baby to NNU. Completion and scoring of the second 20 inventory items enables measurement of the trait score, i.e. an estimate of the usual anxiety of an individual.

Spielberger et al (1983) administered the STAI to specific groups under relatively non-stressful situations and they were then able to define normative data, means and standard deviations, for both trait and state anxiety scores. As expected there was little difference between the trait and state anxiety scores. Spielberger et al (1983) conducted experiments with college students to determine if there was any difference in state anxiety when the state inventory was administered under a non-stressful condition and then under stressful conditions. The college students scored higher under the latter conditions than the former. However this population was

dissimilar to the sample in the 'study', therefore the results could be used only as a guide.

From Spielberger et al's (1983) figures and in consultation with supervisors, it was decided that in the 'study' a significant difference in anxiety would be viewed as an increase of more than one standard deviation. However Spielberger et al (1983) reported a standard deviation of 12 for the mothers and nine for the fathers. To simplify data management and comparisons, it was decided to choose one value, a value of 10, for use in this 'study'. Therefore the 'effect' used in the power calculation, i.e. the difference in mothers' and fathers' mean state anxiety scores over mean trait anxiety scores of more than 10 points was chosen.

Power calculation also required knowledge of the statistical test to be used to determine any effect. As it was assumed that the direction of difference would be in one direction, i.e. unprepared parents would be more anxious than prepared parents, the power analysis was based on a one-tailed t-test (Hicks 1996).

The level of significance for statistical testing was 0.05 and the generally accepted power level of 0.8 (Polit and Sherman 1990) was chosen.

The computed power analysis suggested samples of 64 mothers and 38 fathers were required. When the 'study' was undertaken, a convenience sample of 65 mothers was achieved but only 64 completed the data generation as required. A convenience sample of only 26 fathers could be recruited, and only 25 completed the data generation as required. There were two main reasons for the failure to reach the target of 38 fathers. Usually the mother was recruited first and then access to the father was gained (see section 10.2.1). When the sample of 65 mothers was achieved only 26 of the fathers had been accessed. Due to the restrictions on the time and availability of the 'researcher', further recruitment of fathers did not continue, either by continuing to recruit mothers and then gaining access to the fathers or by

changing to recruitment of fathers alone. Therefore the initial sample of 26 fathers was accepted.

8.3 Parents

This section begins with an explanation of the plans for recruitment of parents to the first stage of data generation incorporating their inclusion criteria. The second part of the section provides an explanation of the plans for recruitment of parents to the second stage of data generation. Explanations of how the plans proceeded are found in section 10.2.

8.3.1 Recruitment to the first stage of data generation with parents

The initial hours and days after any birth are sensitive periods and even more so for the parents of a baby admitted to NNU (Klaus and Kennell 1982, McHaffie 1987 and 1990). However this was the time frame in which the 'researcher' was interested. Previous researchers tried to limit intrusions during that time, with some opting for contact once the baby had recovered or was at home (see section 3.3). The motives of these researchers is appreciated, however the time lapse between the event and the generation of data can lead to distortion due to difficulty in recall (Robson 1993). Therefore for the purposes of the 'study' yet to reduce recall distortion, efforts were made to recruit parents before 120 hours (five days) of their baby's admission to NNU.

However, in order to minimize any additional negative stress to parents, the overall condition of the baby and the mother were taken into account. The 'researcher' ascertained from the midwives caring for the mother and from NNU staff that the condition of the mother and/or baby was/were stable before the parents were approached. If there was any instability, the parents were deemed ineligible and were not approached (see inclusion criteria).

The data generation tools, explained in chapter nine were written in English. The 'researcher' is only fluent in English. No funds were available for the services of an interpreter, therefore the participants had to speak and read English.

Therefore, the criteria for inclusion of parents in the 'study' were that:

- the baby was an inpatient in NNU and had been for less than 120 hours
- the parents spoke and read English
- the parents gave written consent to participation in the 'study'
- the parents gave permission for the baby's records to be accessed by the 'researcher'.
- in consultation with midwifery and NNU staff, there was no instability of the baby's and/or mother's condition, i.e.

1. the mother was not suffering from serious medical/obstetric problems such as severe hypertension, post-partum haemorrhage or renal failure requiring care in the high dependency area of the labour suite,
2. the mother's emotional condition, or social situation, including the drug dependent woman whose baby was likely to become a ward of court, or the woman with severe mental illness, were such that participation would not be detrimental or was considered inappropriate,
3. the baby's condition had not deteriorated markedly during the previous 12 hours
4. the baby was not dying.

A consenting convenience sample of 65 mothers and 26 fathers was recruited from the population of parents whose baby had been admitted to a large regional referral NNU during a period of approximately 14 months. Only 64 mothers and 25 fathers completed the first stage of data generation (see section 10.2.1). The length of time for recruitment was because the 'study' was undertaken on a part-time basis, with irregular opportunities to access the population on the initial two required occasions. The first occasion was for distribution of the parents' letter/subject information and the second occasion was at least 24 hours later to ask for consent (see section 10.2.1 and Appendices 4 and 5), and to undertake the first stage of data generation from

parents, babies and NNU staff, if appropriate. Recruitment continued until the mothers' sample was complete, but more time could not be given to recruitment of the full fathers' sample (see section 10.2.1).

8.3.2 Recruitment to the second stage of data generation with parents

The recruitment of parents to the second stage of the parent's data generation was planned to be from a purposive sampling framework (Holloway and Wheeler 1996). From preliminary scrutiny of a completed parent's questionnaire (see section 9.1.1.2 and Appendix 12), the parents could be categorised by the 'researcher' as parents with no prenatal preparation, and those who had different forms of prenatal preparation. Parents from each category would be invited to participate and it was hoped that the parents who self-selected and consented (see Appendix 8), would be from each category. This selection was planned to result in a heterogeneous sample. However, execution of the planned strategy proved difficult (see section 10.2.2).

From the initial sample of 65 mothers and 26 fathers, 5 mothers consented to participate in the second stage of the parent's data generation. No fathers consented to participate. This lack of recruitment was mainly due to the parents' expressed desire not to have the conversation taped, although they were more than willing to converse informally. Despite the difficulties, recruitment to the second stage of the parent's data generation was purposive. The first three mothers had no prenatal preparation and their babies were in special care, level 1 and level 2 intensive care respectively. This indicated a degree of heterogenity. Attempts were made by the 'researcher' to recruit further parents who had experienced prenatal preparation. Two mothers were then recruited, both having had different types of prenatal preparation. One mother had experienced a previous baby being admitted to the NNU, while the other, a primigravida, had visited the NNU and had discussions with the paediatric medical staff. The babies of these mothers were in level 1 and level 2 intensive care, again giving a degree of heterogenity.

8.4 NNU staff

This section begins with an explanation of the plans for recruitment of NNU staff to the first stage of data generation incorporating their inclusion criteria. The second part of the section provides an explanation of the plans for recruitment of NNU staff to the second stage of data generation. Explanations of how the plans proceeded are found in section 10.3.

8.4.1 Recruitment to the first stage of data generation with NNU staff

The original plan was that all NNU staff assigned to care for the babies, for the first 48 hours after admission, of the parents who consented to participate in both stages of the parents' data generation were to be invited to participate. This plan was successful for the five mothers who did participate in both stages.

The original criteria for inclusion of NNU staff into the 'study' were that:

- the NNU staff member had cared for the baby of parents who participated in both stages of the parents' data generation, at some point during the first 48 hours after admission
- the NNU staff member gave written consent to participate in the 'study'.

Because recruitment of parents to the second stage of data generation was difficult (see section 10.2.2), reconsideration of the NNU staff recruitment plan was required. After consultation with academic supervisors, it was decided to extend the invitation to participate to the NNU staff assigned to care for the babies, for the first 48 hours after admission, of the parents recruited after the thirty second mother's recruitment (see section 10.3.1). Therefore the revised criteria for inclusion of NNU staff into the 'study' were that:

- the NNU staff member had cared for the baby of eligible parents at some point during the first 48 hours after admission
- the NNU staff member gave written consent to participate in the 'study'.

A self-selected consenting convenience sample of 54 staff was recruited, representing a 64% response rate. Due to the length of the recruitment phase, several of the staff cared for more than one of the babies whose parents consented to participate and were thus asked to participate more than once, but in relation to different parents and babies. Of the 54 staff, 33 staff participated once, 12 participated twice, six participated three times and two participated four times. These 54 staff therefore represented 83 episodes of participation and were considered as a sample of 83.

8.4.2 Recruitment to the second stage of data generation with NNU staff

It was planned to invite all NNU staff who participated in the first stage of data generation to participate in the second stage (see Appendix 9). From the 54 invitations, a self-selected convenience sample of NNU staff consented to participate in the second stage of data generation (see Appendix 10). There were 15 staff initially recruited to this stage, representing a 28% response, but only 13 consented, a 24% response (see section 10.3.2).

8.5 Babies

This section includes the required but brief explanation of the plans for the recruitment of babies. Although the babies' clinical records were accessed for demographic data, it is more suited to the focus of the 'study' to refer to a sample of babies rather than to a sample of baby records.

It was planned that all the clinical records of babies of the participating parents, would be accessed by the 'researcher' following parental consent and specific data recorded from them (see Appendix 5). All participating parents consented, therefore a sample of 73 babies was achieved.

Summary

This chapter focused on the participants. The strategies designed to recruit parents, babies and NNU staff were explained. The participation of parents and NNU was requested, and written consent was given in accordance with ethical guidelines (see section 10.1). The participating parents were asked to consent to the access by the 'researcher' to their baby's records. The time given by parents and NNU staff to this work and the contributions they made to the 'study' were much appreciated and all participants were thanked in writing and verbally when feasible.

Methods

Chapter 9

Data generation tools

Introduction

In this chapter, the tools used to generate data from the samples are described and justified. There are three sections. The first focuses on the tools used with the parents, the second focuses on the tool used when accessing the baby's clinical records, and the third focuses on the tools used with the NNU staff. Explanations are given about the tools, as is justification for their choice.

9.1 Parents

In this section, the tools used with parents in both stages of the data generation process are described and their use justified. The first tool is the parents' questionnaire, the second is the STAI and the third is the semi-structured interview.

9.1.1 Parents' questionnaire

The parents' questionnaire was used to generate demographic data and data on preparation (see Appendix 12). These uses are discussed in the next sub-sections.

9.1.1.1 Demographic data

In each of the studies in section 3.3 of the literature review, demographic information about the sample was presented. Such information helped describe the samples and enabled comparison with characteristics of the populations, allowing assessment of samples' representativeness or bias. Therefore demographic data were deemed relevant for descriptive and comparative purposes in the 'study'.

It appeared that in previous studies, the questionnaire on which demographic data were noted was 'researcher-devised'. While each questionnaire allowed data generation on specific factors of relevance to individual researchers, common factors were evident. The demographic questionnaire devised for the 'study', included several of the common, as well as specific factors. The factors are outlined below, with rationale given for their inclusion where appropriate.

It was important for the 'researcher' to be able to identify to whom the data pertained, therefore identification of the participant's first name and surname on the questionnaire was requested. These are common factors. In line with ethical guidelines, no participant was to be referred to by name in any written report connected to the 'study' and such confidentiality was referred to in the parents' letter of introduction/ subject information sheet and on the parents' questionnaire (see Appendices 4 and 12).

The unit in which data were generated was a large regional referral NNU. Babies were regularly transferred in to the NNU from other locations in Scotland and the north of England. Preparation for NNU care varied in Scotland (Greig 1998) and if differences in preparation were identified in the sample, it was important to be able to identify where the parent/s lived so that comparisons could be made. For this reason and because the General Practitioner (GP) had to be informed of individual parent's participation, information about the parent's home address was requested. To enable communication with the GP, his/her name and address were also requested. These factors were specific to the 'study', although in previous studies, the researchers appeared to be aware of the participants' home addresses.

Many factors have been suggested to increase the risk of a baby being admitted to a NNU (Korones 1986, Levene and Trudehope 1993). These include:

- previous obstetric problems
- existing maternal disease
- fetal disease
- multiple pregnancy
- the age of the mother
- social factors.

The first three of these factors included so many diseases and problems that were likely to be too diverse to include in the 'study'. Multiple pregnancy status was

easily incorporated into the questionnaire related to the baby (see section 9.2.1 and Appendix 13). The mother's age and social factors were included in the demographic data questionnaire. These factors had been commonly included in previous studies.

Within these broad factors, the specific aspects that posed a higher risk of admission to NNU were if:

- the mother was younger than 20 or older than 35 years
- the education level was low
- there was unemployment
- there was limited social support especially related to marriage/partnership.

Therefore parents were asked to identify

- their present age and their age when they left school
- their marital status, with fixed choices of single, married, cohabiting, divorced, separated, and other
- their post-school education, with fixed choices of Further Education College, Higher Education College, University, Professional Education Establishment, none, and other, from which they could make multiple choices
- their employment status, with fixed choices of never employed, unemployed, self-employed, employed, full-time, part-time, casual, housewife, house husband, and other, from which they could make multiple choices (see Appendix 12).

9.1.1.2 Data on preparation

As indicated in section 3.3, previous studies had used multiple data generation tools with the participants (Blumberg 1980, Gennaro 1986 and 1988, Shields-Poe and Pinelli 1997). Therefore to reduce the demands on parents, it was deemed appropriate to include within the one questionnaire not only questions on demographic data, but also questions related to preparation for the admission of the

baby to NNU (see Appendix 12). This strategy was expected to simplify the data generation process for parents who were potentially in a crisis (Caplan et al 1965).

The survey of parent's prenatal preparation for NNU care (Greig 1998) found that some midwives reported that they gave more preparation to parents whose baby was expected to be admitted to NNU or had a potentially higher risk of admission. Therefore parents were asked to identify if their baby's admission to the NNU was expected or not. If the admission was expected, it was important to identify whether there would have been sufficient time for specific preparation to be undertaken. Therefore parents were asked to identify how long before the admission they had known the baby would be admitted. This factor was specific to the 'study', as were all the remaining factors identified below.

The admission of a baby to NNU was considered a crisis for parents and therefore a threat to their mental health (Caplan et al 1965). If an individual was prepared for such a crisis, the crisis could possibly be averted, with no threat to mental health (Kaplan and Mason 1967). LeMasters (1967) suggested previous experience could be considered as a form of preparedness for coping with crisis. Therefore, if parents had previous experience of NNUs, any experience of crisis when a subsequent baby was admitted to the NNU might be reduced or averted.

To generate the data to enable assessment of whether such a relationship existed in the sample, parents were asked if they had previous experience of NNU or not and if they had, to explain what the previous experience had been.

One of the objectives of the 'study' was to determine the extent to which current prenatal preparation of parents for neonatal care met the perceived needs of parents whose baby required NNU care. For the purpose of the 'study', preparation included any previous experience of NNU and/or any verbal and/or other media presentation about NNU care and/or tour of NNU. The latter three means were considered prenatal information. Another of the objectives of the 'study' was to determine

whether there was any difference between parents 'prepared' in different ways and between 'prepared' and 'unprepared' parents in their anxiety, their initial contact with their baby in NNU and the level of support offered by NNU staff.

Data were generated using other tools about parental anxiety, initial contact with their baby, and the level of support offered by NNU staff. Therefore in the questionnaire, parents were asked whether they had been given information about NNUs, and if so, to identify the source/s and explain what the information had been. There were fixed choices, from which parents could make multiple choices, on the sources of information and these were the midwife, the GP, the obstetrician, the health visitor, the family, newspapers and magazines, friends, a visit to the NNU, the neonatologist, television, videos and films, and other. It was expected that their explanation of the information would be written freely.

The questionnaire was deliberately designed to be straightforward and easy to complete, in line with guidelines by Dillman (1983). It was estimated that the questionnaire would take about five to ten minutes for the parent to self-administer (see Appendix 12).

9.1.2 Measurement of anxiety

Spielberger et al (1983) suggested that anxiety was a subjective phenomenon, therefore it required specific tools to measure it objectively. The literature reviewed in section 3.3 revealed that researchers had used a small variety of tools to measure the feelings of parents whose baby had been admitted to NNU. The tools have all been described in detail in section 3.3, therefore only a brief description will be included in this sub-section. The other tools evaluated for possible use in the 'study' are described and explanations for discounting their use in the 'study' are given. The rationale for the choice of tool used in the 'study' is given.

Although the abbreviations for some of the tools have been established in section 3.3, the full name of each tool and its abbreviation are given in this sub-section for ease of reading.

9.1.2.1 Tools used in previous studies

Blumberg (1980) used the State Trait Anxiety Inventory (STAI) (Spielberger et al 1977) to measure feelings of anxiety experienced by mothers of preterm and term babies. While Blumberg (1980) also measured depression and attitude using the Depression Adjective Check Lists (DACL) (Lubin 1967 cited by Blumberg 1980) and the Maternal Attitude to Pregnancy Instrument (MAPI) (Blau et al 1964 cited by Blumberg 1980), she tended to concentrate on the findings related to anxiety in her discussion. The trait anxiety and maternal attitude were positively correlated with state anxiety, and therefore appeared predictive of state anxiety. There was no such association with depression. Blumberg (1980) made no critical evaluation of the tools she used, except to acknowledge their established validity and reliability.

Gennaro (1986) used the STAI in her study of mothers of preterm babies. She acknowledged the validity and reliability of the tool but failed to explain the rationale for using only the state anxiety scale. In 1988, Gennaro repeated her use of only the state anxiety scale of the STAI, again without an explanation for the exclusion of the trait anxiety scale. In this study she also used the DACL, used previously by Blumberg (1980). Gennaro (1988) criticized Blumberg's study, yet used virtually the same data generation tools.

By 1990, Gennaro et al had chosen another tool to assess maternal mood, including anxiety and depression, the Multiple Affect Adjective Check List – Revised State Form (MAACL-R) (Zuckerman and Lubin 1988 as cited by Gennaro et al 1990). No rationale was given for the change in data generation tool, but Gennaro again made this selection in a subsequent study with Stringer (Gennaro and Stringer 1991).

However, more recently, Shields-Poe and Pinelli (1997) favoured use of the STAI to assess anxiety in parents of babies in NNU. They acknowledged the established validity and reliability of the tool. From the studies reviewed, Shields-Poe and Pinelli (1997) were the first researchers to use the STAI with both mothers and fathers of babies in NNU.

The STAI has therefore been the tool used most often by researchers studying anxiety in parents of babies admitted to NNUs. There were no negative evaluations of the tool in any of the studies, although Spielberger et al's (1983) acknowledgement of the variability of the state anxiety scores across different study circumstances was included by several of the researchers.

In the review of the literature in section 3.3, it was established that while many feelings were experienced, anxiety was the most commonly reported feeling parents experienced when their baby was admitted to NNU. Therefore in the 'study', anxiety was designated as a variable of interest and the variable that should be specifically measured.

This decision resulted in the DACL (Lubin 1967 cited by Blumberg 1980) being discounted for use in the 'study' as it measured only depression. The MAACL-R (Zuckerman and Lubin 1988 as cited by Gennaro et al 1990) were also discounted because they measured several aspects of maternal mood, not just anxiety.
In the exploration for other appropriate tools, several were evaluated and discounted.

The following sections give a brief explanation of these tools and the rationale for not using them in the 'study'.

9.1.2.2 The Edinburgh Postnatal Depression Scale

A major tool for the assessment of postnatal depression, the Edinburgh Postnatal Depression Scale (EPDS) (Cox et al 1987) was evaluated. The validation study for the original 13 item EPDS resulted in its adaptation to a 10 item self-report scale

(Cox 1994). The EPDS is designed as a screening tool for primary care health professionals to administer to mothers who regard themselves as well, during the second or third postpartum month. Each item scores 1 to 3, with 3 being severe. A threshold score of more than 12/13 is suggestive of a depressive illness and the mother should undergo further assessment (Cox et al 1987). The threshold score is the number of symptoms where the probability of the individual having the condition is greater than 0.5 (McDowell and Newell 1996). The EPDS has reported reliability of 0.87 (Cox 1994) and is also considered a reliable tool (Cox et al 1987, Green and Murray 1994, Holden 1994).

Although a suitable tool for use with postnatal women, and very helpful in the assessment of depression, the EPDS is not useful for the assessment of anxiety (Cox 1994). While the tool has been suggested as possibly suitable for use with fathers in the postnatal period, there is no established validity or reliability for the EPDS with this population. For these reasons, the EPDS was discounted for use in the 'study'.

9.1.2.3 The Beck Depression Inventory

The Beck Depression Inventory (BDI) (Beck et al 1988) was also evaluated. The BDI consists of 21 items each with four response choices covering symptoms associated with depression. The respondent self-rates, choosing one answer per item. Each answer scores 0 to 3, with 3 indicating most severe. The scores are then summed and the higher the overall score, the greater the severity of depression. There is some doubt about the validity and reliability of the BDI. Bowling (1995) reports validity between 0.58 and 0.7, and summarizes well the factors that may influence the reliability of the BDI, such as its weighting towards pessimism and failure, as well as a possible bias towards social desirability. While it is an easy tool to administer and it has been used in non-psychiatric populations, the BDI only measures depression and therefore was discounted for use in the 'study'.

9.1.2.4 The General Health Questionnaire

The General Health Questionnaire (GHQ) (Goldberg 1978) is acknowledged as the most widely used self-rating tool to screen for psychiatric disorders in clinical as well as general populations (McDowell and Newell 1996). The GHQ is designed to assess four types of symptoms that often occur when an individual is distressed, i.e. depression, anxiety, social impairment, and hypochondriasis. Respondents are asked to identify which symptoms from the given list they have recently experienced and how these symptoms compare with their usual state. The GHQ has undergone much development and is available in five different versions, with the 12 and 30 item versions being the most often used (Goldberg and Williams 1988).

There is a four-point scale of severity with two response choices scoring 0 and the other two scoring 1. The scores are summed and a threshold score calculated. Each of the GHQ versions has a threshold score, if the respondent's score is higher, a psychiatric disorder is probable and further testing is recommended to reach a diagnosis (Goldberg and Williams 1988).

This tool has been widely used with different populations. Depending on the version used, reliability is reported between 0.82 – 0.95, and many validation studies have been undertaken showing a high degree of validity (McDowell and Newell 1996). One limitation of the GHQ is that if a respondent has experienced a symptom for a long time, he may regard this as 'usual'. Therefore, when asked to compare his current state with his 'usual' state, the problem may not be identified. Another limitation is that the GHQ may not be able to allow differentiation between a physical and a psychiatric disorder (Bowling 1995). There are also concerns that some items may not be appropriate to mothers of young children, giving more false-positive results. A higher threshold score is suggested if the GHQ is used with this population (Bowling 1991).

Anxiety is only one of the four aspects of distress included in the GHQ. This lack of focus on anxiety, the variable of interest in the 'study', was one reason for

discounting the GHQ as an appropriate tool. Another reason was that the GHQ only gives an assessment of current status compared with 'usual' status, rather than an assessment of both current and 'usual' status. From the review of the literature for the 'study', it was concluded that measurement of anxiety after the baby was admitted to NNU and 'usual' anxiety was necessary to assess any difference between the two. The GHQ does not allow for these two measures. Also none of the studies reviewed (see section 3.3) administered this tool, therefore comparison of the results of the 'study' and previous results would not be practical.

9.1.2.5 The Hospital Anxiety and Depression Scale

Acknowledging that differentiating between anxiety and depression is difficult, Zigmond and Snaith (1983) devised the Hospital Anxiety and Depression (HAD) Scale. There are 14 items on this self-rated scale that are divided in half, one part related to anxiety and the other related to depression. Each of the seven items on each sub-scale scores from 0 to 3, with 3 being the highest. The anxiety scores are summed, as are the depression scores. Scores of 11 or more on either sub-scale indicate anxiety or depression problems (Zigmond and Snaith 1983). The HAD scale is reported to be a valid and reliable tool in community and psychiatric settings and the scores are unaffected by physical illness (Snaith 1993). Its brevity is appealing to patients and it has been reported to have been used in diverse inpatient populations (Elliot 1993), although no evidence of its use with postnatal women could be located.

This latter point was one reason for discounting its use. Spielberger et al (1983) present arguments that anxiety can be measured independently, therefore the HAD was also discounted for use because it included measurement of depression as well as anxiety.

9.1.2.6 The Brief Anxiety Scale

A tool that specifically measures anxiety is the Brief Anxiety Scale (BAS) (Tyrer et al 1984). This scale can be used independently in individuals with anxiety neurosis,

or as part of a more comprehensive evaluation of individuals with other psychiatric disorders. It allows observer-rated scoring of 0 to 6 of the following ten symptoms of anxiety; inner tension, hostile feelings, hypochondriasis, worrying over trifles, phobias, reduced sleep, two types of autonomic disturbances, aches and pains, and muscular tension. The higher the rating, the greater the experience of anxiety symptoms. The authors suggested that the rating be done during one interview and repeated, at intervals of at least one week, to show any differences in anxiety. No estimate of validity or reliability was reported (Tyrer et al 1984).

The symptoms of anxiety were helpful in guiding the 'researcher's' observations of the parents documented in the field notes (see sections 10.2.1 and 10.2.2). However this tool was rejected for formal use in the 'study' because it was did not allow for measurement of the parents' usual anxiety for comparison with the anxiety experienced when the baby was admitted to NNU. It was unlikely that the parents would be suffering from anxiety neurosis or other psychiatric disorders, thus this tool would be inappropriate. Also the 'study' design allowed for completion of the data generation process with each parent within five days of the baby's admission, thus a repeat measurement of the anxiety after a week's interval would not be possible.

9.1.2.7 The State Trait Anxiety Inventory

With the above tools discounted, the STAI was further evaluated for use in the 'study'. The STAI is designed specifically to measure anxiety and consists of two forms of 20 items each with a choice of four fixed alternatives, scoring one to four points. Form Y-1 items measure anxiety at the point in time the questionnaire is administered, i.e. state anxiety. Form Y-2 items measure 'usual' anxiety, i.e. trait anxiety. For either scale, 20-39 is considered as low anxiety, 40-59 is moderate anxiety and 60-80 is severe anxiety. The relative simplicity of the tool made the STAI an attractive option for the 'study'.

There were concerns about imposing on parents at a particularly emotional time, possibly even a crisis, for them. Previous researchers had used multiple tools, many of which were completed during one session with the 'researcher'. The most excessive instance was Blumberg (1980) who had asked that eight tools be completed and amazingly successfully recruited 100 mothers. Given the nature of contemporary NNU and postnatal experiences, replication was deemed unreasonable. The STAI was estimated to take no more than 20 minutes to complete (Spielberger et al 1983) and therefore using this tool would limit the time parents might be interrupted or inconvenienced.

For the purposes of the 'study', the aim was to select a reliable and valid tool to measure anxiety in the sample of parents. The advantage of choosing the STAI was that it had been the most commonly used tool, thus comparisons of findings related to mothers across the relevant studies, including the 'study', would be more valid.

The inclusion of fathers in previous studies had been minimal, and only the STAI had been used to measure anxiety in fathers of babies in NNU. Therefore it was deemed appropriate to use the STAI with the sample of fathers also. While the validity and reliability of the tool with a population of postnatal fathers whose baby had been admitted to NNU were not established, repeated use of the STAI with fathers in subsequent studies could generate data with which to assess validity and reliability.

Availability and accessibility of the tool was also an influencing factor. In a self-funded study, cost is an important consideration as long as the suitability of the tool is not compromised. Licence to use the STAI was readily accessible for payment of a modest fee. The supporting materials and instructions were also supplied.

Therefore the STAI was chosen to measure state and trait anxiety in parents participating in the first stage of the 'study'. Appendix 11 contains a copy of the STAI.

9.1.3 Interview

As indicated in chapters three and four, there were no studies located that determined the extent to which prenatal preparation of parents for NNU care met the perceived needs of parents whose baby required intensive or special care in a NNU. Nor were there studies located that determined if there was any difference between parents prepared in different ways and between prepared and unprepared parents in their anxiety, their initial contact with their baby in the NNU, and the level of support offered by NNU staff.

When little is known about an area of interest or when an area is being explored for the first time, qualitative methods are recommended (Robson 1993, Barker 1996, Holloway and Wheeler 1996). These were the main reasons for the inclusion of qualitative approach in the 'study' (see section 6.1.2). The interview is acknowledged as an excellent tool, as shown by the following examples of its use in the context of the 'study'.

Smith et al (1969) had two psychiatrists administer a structured interview schedule to mothers of preterm and term babies on their feelings about pregnancy and the baby. The data generated were quantified and analysed using inferential tests. Choi (1972) used an investigator developed, structured and administered questionnaire, with opportunities for expression of feelings by the mother, to assess anxiety and depression. These data were also quantified and analysed using test of correlation. Harper et al (1976) used similar methods of data generation and analysis whereas Blumberg (1980) had no discussion opportunities available with the investigator developed structured interview she used in her study.

Jeffcoate et al (1979a and b) used an investigator developed semi-structured interview and analysed the data descriptively but following quantitative data analysis guidelines. It was not until McHaffie (1987 and 1990), that qualitative data

generated from semi-structured interviews were analysed qualitatively. However, Pederson et al (1987) again used an investigator developed structured interview to generate quantifiable data.

Only Harper et al (1976) and Jeffcoate et al (1979a and b) conducted interviews with fathers as well as mothers. As both groups of researchers chose to quantify the data generated, the views and perceptions of fathers lacked systematic exploration using qualitative research methods.

The fact that fathers had not been interviewed from a qualitative perspective in previous studies presented a challenge and therefore the interview was explored with a view to inclusion in the 'study' as a data generation tool.

The interview has been suggested as a "flexible and adaptable way of finding things out" (Robson 1993 p 228). If conducted efficiently and expertly, the interview enables researchers to explore wide and varied aspects of the topic in which they are interested in great detail.

There are several types of interview, with the structured interview at one extreme. In the structured interview, all the closed questions are predetermined and are asked in exactly the same way and sequence to every participant without further interaction (Barker 1996). Contrary to Robson's (1993) view, there is no flexibility in this type of interview. An alternative to the researcher-administered, structured interview is to have the participant self-administer the question schedule. In this format there is virtually no researcher and participant interaction. This type of interview is particularly favoured in survey research. The data are usually quantified and analysed quantitatively, thus possibly losing some of the depth of the generated data, a potential disadvantage. Qualitative researchers rarely use the structured interview (Holloway and Wheeler 1996).

Another disadvantage of structured interviews is the lack of freedom for the participant to diverge in the answers. Again valuable data can be lost as divergence gives insights into areas that the researcher is unaware of, yet are important. Interviewer-participant interaction also yields valuable data in relation to non-verbal behaviour that supplements, complements or possibly alters verbal data (Barker 1996).

Smith et al (1969), Blumberg (1980) and Pederson et al (1987) all used structured interviews in their studies, and thus the depth of the data generated may have been limited.

At the other extreme of the interview continuum is the unstructured interview. None of this type was used in the studies reviewed for the 'study'. This is the most flexible of interviews (Robson 1993). The interviewer usually starts with a broad question related to the topic of interest and then the interview moves in whatever directions the participant moves. The degree of participation of the interviewer is minimal, allowing the participant freedom to talk about whatever, for however long, and in whatever depth he/she wants. However there is the advantage of the researcher being with the participant and thus non-verbal data can also be generated (Holloway and Wheeler 1996).

This type of interview is suited to use in qualitative studies where little is known about a topic and the researcher is interested in exploring it widely and deeply but in a preliminary manner (Barker 1996). None of the researchers in the studies reviewed for the 'study' used unstructured interviews.

Between these two extremes is the semi-structured interview (Robson 1993). This type gains the advantages of the other two types, while avoiding the disadvantages. Possibly for these reasons, this type is most frequently used in qualitative studies (Holloway and Wheeler 1996). In this type of interview, an interview guide is designed in which the basic areas of the topic of interest are converted to open

questions. This guide ensures that all areas in which the researcher is interested are included in the interview, but the questions need not be asked in the same sequence, nor necessarily asked in the same way. The skilled researcher is able to adapt the guide according to how the participant answers the questions, explores and diverges when necessary, yet is able to return to the guide periodically so that all aspects are discussed before the end of the interview. This flexibility also enables the researcher to explore aspects identified in the concurrent analysis of previous interview data, an essential element of qualitative research (Breakwell, 1995).

Choi (1972) and Harper et al (1976) appear to have used a hybrid version of a structured interview with opportunities for discussion that could be considered as an early form of semi-structured interview. Jeffcoate et al (1979a and b) indicated that they used a semi-structured interview, but like Choi (1972) and Harper et al (1976), the data were analysed quantitatively. McHaffie (1987 and 1990) appears to be the only researcher who conducted semi-structured interviews and analysed the data using qualitative methods.

Therefore the semi-structured interview was chosen for use in the 'study', during the second stage of the data generation from parents (see section 10.2.2). While yielding valuable data independently, the generation of qualitative data during the interviews would supplement quantitative data generated via the parent questionnaire and the STAI, thus increasing the overall understanding of the parents' experience (Polit and Hungler, 1989). This strategy conformed to the guidelines for triangulation suggested by Knafl and Breitmayer (1991).

To assist in remembering the words of the participants in as unobtrusive manner as possible, the use of a mini-tape recorder was chosen. Baker (1996) suggested this strategy was the best way of preserving the words of the participants accurately. But he also suggested that certain aspects were considered carefully to ensure that the strategy was successful. Gaining consent to tape record is essential. Using opening

questions that enable the participant to relax and get used to the tape recorder before the interview progresses is suggested. These strategies were included in the 'study'.

Another strategy recommended and incorporated was that summary field notes be written immediately after each interview. These note non-verbal behaviour and any other significant occurrence during the interview (Tyrer et al 1984, Breakwell 1995).

One disadvantage of conducting interviews is that the respondents' attention span may be limited (Polit and Hungler, 1989). In the 'study' this factor could apply in relation to parental anxiety about their baby (Redshaw et al 1996). To try to overcome this disadvantage and improve the quality of the collected data, only one interview lasting approximately 45 minutes was planned with the parents.

Conducting personal interviews can restrict data generation to a geographically near sample (Barker 1996). In the 'study', sampling was planned from one large regional referral NNU in which it had been established that an appropriate cross-section of the relevant population of parents could be accessed (McHaffie 1987 and 1990). Therefore this disadvantage was irrelevant in this 'study'.

Breakwell (1995) considered it important that the researcher is sensitive to and interested in what the respondent has to say. However, when sensitive, emotive issues are being discussed, the respondent can become upset (McHaffie 1996). This could be relevant to the 'study' due to the potential crisis for the parents. However it was planned that the parents would be helped to deal with being upset within the situation of the interview. Termination or continuation of a particular interview in these circumstances would also have to be judged at the time.

Both Oakley (1979) and McHaffie (1987 and 1990) referred to interviewing in the sensitive situations of their research. Oakley (1979) was initially concerned about breaking the taboo that the researcher should exert as little influence as possible on the participants in order to explore a topic as objectively as possible. However she

found that by being sensitive and responding to what the participants said and how they felt, that the participants became more interactive and more data than expected were generated. She felt she became a friend to some participants and developed a relationship with most that was beneficial for both parties as well as for the research process. McHaffie (1987 and 1990) concurred with this, finding the mothers needed to discuss their feelings and were only too pleased to share them with her, even if that meant tears and upset at times.

Robson (1993) presented the arguments for and against this more subjective, often labelled as feminist, approach. Because the approach is less than completely objective, it is considered less scientific, invalidating the findings. To counter this argument, the more objective, scientific research approaches are criticized as being a distortion of reality, as they view the area of interest only from the researcher's viewpoint. Robson (1993) concluded that there was an acceptance of the value of both approaches as long as they were rigorously designed and executed.

The interpersonal skills developed by the 'researcher' for personal professional practice were considered to be beneficial in the 'study'. Reflection and self-evaluation had highlighted some areas for further personal development and such development was undertaken before the data generation began. The aim of the 'researcher' was to develop rapport and build the respondents' confidence, making them feel more comfortable and more willing to participate in the 'study', so that the data generated would be more detailed and relevant, as recommended by Barker (1996), Distance Learning Centre (1992), and Breakwell (1995). Barker (1996) suggested a convenient, private, comfortable location was a suitable one in which to conduct an interview. In the 'study' it was likely that the mother would still be an inpatient, therefore a suitable location within the hospital setting to conduct the interview would be negotiated.

Consideration was given to whether parents would be interviewed together or separately. There were concerns that if both were interviewed together, valid data

might not be generated, as each parent would be aware of what the other said and might restrict their contribution to the interview, or influence each other in ways that biased the data. This would be more problematic if one or other parent was dominant. However interviewing parents together during an emotionally vulnerable time, might allow them to support each other, making the interview an easier process for them (Robson 1993). Using separate interviews would enable full exploration of one individual's views but would mean separating the parents during an emotional time and perhaps would add to their uncertainty and anxiety, with each worried about what the other had said. As Hallgren et al (1995) indicated, their plans for individual interviews with parents were thwarted as some parents spontaneously chose to be interviewed together.

Although time constraints were important, it was decided that if two parents were available and consented, they would be given the choice of being interviewed together or separately, but the same interview guide would be used with both parents. If only a mother was involved and she consented, an individual interview would be conducted.

A semi-structured interview guide was devised so that some direction could be given by the 'researcher', yet parents would be free to explore the aspects they wanted to in more detail, as suggested by Breakwell (1995). A copy of the interview schedule is in Appendix 14.

9.2 Babies

In this section, the tool used to document the data extracted from the babies' records is explained and justified.

9.2.1 Demographic data

In all the studies in section 3.3 of the literature review, demographic information about the babies was presented. Such information helped describe the sample and enabled comparison with characteristics of the population that allowed assessment

of sample representativeness or bias. Therefore demographic data about the babies were deemed relevant for descriptive and comparative purposes in the 'study'.

The explanations given in section 9.1.1.1 in relation to demographic data on parents similarly applied to the demographic data deemed appropriate in relation to the babies. Therefore a 'researcher-devised' questionnaire allowed data to be recorded by the 'researcher' from each baby's NNU records (see Appendix 13). This strategy avoided any interruption of NNU staff time and avoided having to ask parents to complete these details.

The data that were required were surname with space for the first name to be added if it was available, gender, date of birth and date of admission to NNU as sometimes these are different, gestation, birth type, birth weight, and the main diagnoses.

It appeared that in previous studies, specific tools were used to determine the level of sickness of the baby. Harper et al (1976) used the Infant Morbidity Score that required data to be selected from the babies' records. It was unclear how this tool was developed and its reliability and validity were not acknowledged.

Broussard and Hartner (1970) developed the Neonatal Risk Category (NRC). Its validity and reliability were established. This tool was used by Blumberg (1980) and by Gennaro (1986 and 1988), although by 1988, Gennaro referred to the tool as the Neonatal Risk Categorization Schema. This tool required information to be gleaned from the babies' records with categorization from no risk through to highest risk.

Pederson et al (1987) used the Infant Morbidity Score that also required selection of data from the babies' records. This tool was developed by Minde et al (1983 cited by Gennaro et al 1990) and had established validity and reliability. It appeared that Gennaro et al (1990) and Shields-Poe and Pinnelli (1997) used the same tool but it was renamed as the Neonatal Morbidity Scale.

At the time the 'study' was being planned, levels of neonatal care in the UK were categorised according to guidelines from the BAPM and NNA (1992) (see Appendix 1). There were three levels, special care, level 2 intensive care and level 1 intensive care. The characteristics of babies who required each level were clearly outlined and present a simple, reliable and valid means of categorising babies throughout their stay in a NNU.

This system was used in the 'study' NNU and the 'researcher' was familiar with it in personal professional practice and classroom situations. Therefore rather than choose a specific tool to measure level of risk in the 'study', an item on the baby's questionnaire enabled documentation of the level of care required during each of the first five days of life. This information was clearly available and verifiable in the baby's record and by confirmation at the cotside with the baby's nurse/midwife. This section on the questionnaire also included categories to record if the baby had died, had been transferred to the postnatal ward or to another hospital or home.

There was an item labeled as 'other pertinent information' and it was intended that details of birth number and siblings could be documented if applicable. This space would also allow the 'researcher' to document any other data felt appropriate for any baby.

9.3 NNU staff

In this section the data generation tools used with the NNU staff are explained and their choice justified. Firstly the NNU staff questionnaire is discussed and then the use of the focus groups.

9.3.1 NNU staff questionnaire

The NNU staff questionnaire was used to generate demographic data and data on staff contact with parents, parent-infant interaction and staff support of parents (see Appendix 15. These uses are discussed in the next sub-sections.

9.3.1.1 Demographic data

None of the studies reviewed in section 3.3 had included the perspective of the staff, therefore this aspect was included in the design of the 'study'. Using similar rationale as that used in relation to the parents and babies, it was deemed important by the 'researcher' that demographic data about NNU staff were documented. With no specific guidance as to what demographic data should be generated, the 'researcher' devised five questions based on the principles on which the demographic data questionnaire for the parents and the baby had been developed (see sections 9.1.1.1 and 9.2.1).

The questions asked for data on surname, first name, professional status, i.e. nurse, midwife, midwifery/nursing sister, or midwifery/nursing student, length of experience in the NNU, and details of post-registration neonatal education. These data would give a description of the sample and enable assessment of any bias.

9.3.1.2 Contact data

Based on the objectives of the 'study', the 'researcher' sought data related to staff contact with parents, parent-infant interaction and staff support of parents. There were no relevant data generation tools available to the 'researcher'. The 'researcher' was aware that if staff participated, it was likely they would complete the documentation during their working hours. To try to limit this imposition on their time, a relatively quick and easy tool was required. A questionnaire has these advantages (Barker 1996), and therefore the 'researcher' chose to include questions on staff contact with parents, parent-infant interaction and staff support of parents within the NNU staff questionnaire.

The question on parental contact with the baby demanded summing the number of visits the mother and/or the father made in the time the member of NNU staff cared for the baby during the first 48 hours after admission. With guidance from the literature as to the contact parents usually engaged in during visits with their baby, a selection of fixed choice alternatives was devised (Klaus and Kennell 1982, Wyly

1995c). The alternatives were seeing, touching, holding, talking with, sitting with, and participating in care. The type of care was to be specified. The member of NNU staff could choose as many of these alternatives as applied and/or specify what 'other' contact there had been.

The NNU staff member was asked to identify which of these contacts the parents had required encouragement from the staff to make and how any encouragement had been given. The former of these questions was of a closed type with fixed alternatives, but with a category of 'other' that gave some flexibility in the answer. The latter question was of an open format that enabled expression of personal practice. A similar open question format was used for the final three questions that asked staff for their personal perceptions of the parents' preparedness, the quality and the quantity of the parent-infant contact, and for any other comments.

The questions on personal perceptions were difficult to construct in order that they were open and non-directive, yet gave sufficient guidance that allowed for understanding and that facilitated valid answers. According to Barker (1996), question construction is fraught with problems and it takes skill to devise an appropriate questionnaire. While the guidance of Robson (1993) to reduce the number of open questions was taken, in that there were only four included, it was felt that questions on personal perceptions could not be avoided completely. This was because this was a new avenue of enquiry. An interview with each member of staff would have been the preferred strategy to overcome this difficulty, yet generate the required data (Barker 1996). However time and cost constraints prohibited this.

The questionnaire was designed to be completed in 10-15 minutes. It was envisaged that the answers to the open questions would generate data that could be analysed descriptively and could provide guidance for a second stage of data generation from staff.

9.3.2 Focus group

Because of the constraints on the 'researcher', individual interviews with staff members were not possible. Therefore apart from demographic data, the questionnaire was designed to generate data on parent-infant contact, and NNU staff members' perceptions of the preparedness of parents and the support they required from NNU staff. However, more detailed data were required on these latter aspects as they did not appear to have been previously systematically explored. A suitable alternative to individual interview is the generation of qualitative data using the focus group strategy (Macleod Clark et al (1996), therefore it was used in the second stage of data generation from NNU staff. This also complied with the guidelines for triangulation suggested by Knafl and Breitmayer (1991).

In 1996, Macleod Clark et al identified that the focus group was becoming more frequently used in nursing research, having been most often used previously in market research. This type of interview involves a group of participants being asked questions by the interviewer, asking questions of each other, and with the answers, discussion is generated. The interviewer takes a minimal role in the discussion apart from the initial direction, occasional probing and possibly some maintenance of the focus of the discussion. Often the interviewer is known as the moderator (Morgan and Krueger 1993). A focus group is expected to be open, friendly and facilitate the generation of detailed qualitative data (Morgan and Krueger 1993). Observation by the interviewer of the respondents' non-verbal behaviour during the group allows further data generation as these observations are usually documented in field notes (Robson 1993, Breakwell 1995).

Merton et al (1990) noted that they were credited with the introduction of the focus group in 1956. Since then, several proponents including Morgan and Krueger (1993) have developed the understanding of the focus group, so that it has become an accepted means of qualitative data generation.

As with all data generation methods, conducting a focus group is not presented as an easy option. However the depth of data that are generated by the interaction of the participants are sufficiently detailed that Macleod Clark et al (1996) suggested it was worth trying to overcome the associated problems. The problems cited included the logistics of getting the participants together in a suitable venue, dominant and submissive participants, participants who are too similar or too unalike, the unknowledgeable, unprepared and/or ineffective moderator, and bringing the group discussion to an end (Morgan and Krueger 1993). The problems encountered when taping interviews are also considered applicable to the focus group, where the discussion is tape recorded (see section 9.1.3).

None of the studies reviewed in section 3.3 used a focus group. However in the 'study' when individual interviews were not possible, the focus group was chosen as an appropriate method of generating qualitative data with NNU staff in the second stage of data generation.

Summary

The quantitative and qualitative data generation tools have been described and the rationale for their choice justified. The STAI was accepted as a valid and reliable tool for use with the parents' samples. The questionnaires for use with parents, the babies and the NNU staff were 'researcher-developed', as were the guides for the interviews and the focus groups. The reliability and validity of these tools was not established, however they were developed from a critique of previous studies and from neonatal clinical experience, therefore face validity was assured. Evaluation of the tools was undertaken as the data were extracted and analysed (see chapters 12 and 16).

Methods

Chapter 10

Procedures

Introduction

In this chapter there is an explanation of the procedures used to undertake the 'study'. There are three sections. In the first there is discussion of the ethical considerations that guided the procedures. The second section explains the procedures used with the data generation from parents and their babies. In the third section the procedures used with NNU staff are explained. There was identification and justification of the deviations that had to be made from the original plan.

10.1 Ethical Considerations

The 'researcher' is in full time professional employment and the 'study' was conducted on limited part-time basis with no independent funding. Travel and time restrictions were significant. Therefore the 'study' was conveniently based in one medical regional referral NNU in an urban area in Scotland. This unit provided easy access for the 'researcher' to a large, diverse population of parents.

The local Research Ethics Committee, Paediatrics/Reproductive Medicine Sub-Committee granted ethical approval for the 'study' (see Appendix 16). Once ethical approval was given, the National Health Service Trust executive, Director of Midwifery Service and the NNU Clinical Service Manager were approached for formal permission to conduct the 'study' within their area of jurisdiction. Information sessions then took place with management, medical and NNU staff in the NNU, to advise them of the 'study', its purpose, the design, the data generation methods and how they might participate. All personnel either gave formal written permission for the 'study' to proceed or were positive in their comments about the 'study'.

Participation in the 'study' was voluntary and all data generated were treated confidentially. In compliance with the Data Protection Act licence held by her

employer, all data stored by the 'researcher' were secure, were only available to the 'researcher' and supervisors, and all records will be destroyed after completion of the 'study' and assessment of the thesis.

It was important to identify to whom the data pertained. Therefore parents and staff were asked to identify their first name and surname on the questionnaire, knowing that their identity was confidential to the 'researcher' and supervisors, as indicated in the letters of introduction/subject information sheet to participants and on the actual data forms (see Appendices 4, 6, 12 and 15). The surname of the babies was also noted to allow matching with parents and NNU staff. However, no participant was, or will be, referred to by name in any written report connected with the 'study'.

As participation might have caused some discomfort or distress to the parents, strategies were incorporated into the design to try to reduce any adverse effect on parents. Previous researchers have justified recruiting participants who were in similarly emotionally vulnerable situations (Mander 1994, McHaffie 1996). They suggested that the increased knowledge and understanding a study would generate and the potential personal benefit of participation to parents justified their temporary discomfort/distress.

The NNU staff member caring for the baby of potential participants was asked by the 'researcher' about the condition of the baby and mother prior to the 'researcher' seeking out the parents to ask them to participate. If there was any indication that there was any instability of the condition of either, the 'researcher' did not make contact (see sections 8.3.1 and 10.2.1).

During data generation, three mothers became emotionally upset and the 'researcher' dealt sensitively with the situation. In all three instances the mothers indicated that they felt much better for their emotional expression. This type of experience had been reported by Mander (1994) and McHaffie (1996) and was considered helpful for the participant. In two situations when the mother was

participating on her own, the mothers had completed the written data generation and were discussing with the 'researcher' about their experiences, when they became so emotionally upset, that the 'researcher' judged it appropriate to discontinue formal data generation. However, the 'researcher' stayed with the mother, talking through her distress, until she became more composed and termination of the contact then involved an expression of thanks to the mother for her helpful participation.

As the participating mothers were in-patients, there was an obligation to inform each mother's General Practitioner (GP) of their patient's participation. This was done using a standard letter (see Appendix 17), and a copy of the mother's written consent (see Appendix 5). Following feedback from one GP early in the 'study', the mother's age and address were also included in the information to the GP to facilitate correct record keeping by the GP. Although the participating fathers were not in-patients, as a courtesy, a letter and copy of the written consent was sent to the father's GP giving notice of the his participation. The father's address and his age were included in the notification.

10.2 Parents and babies

This section is divided into three sub-sections. The first sub-section focuses on the first stage of the procedures undertaken with the parents and babies. The second sub-section explains the second stage of the procedures undertaken with the parents. The third sub-section discusses the procedures that occurred with each data generation episode with parents.

10.2.1 First stage

The 'researcher' prepared a letter of introduction / subject information sheet about the 'study' (see Appendix 4), to include in the normal admission packages. It was agreed with the NNU staff that the admitting staff member would hand this letter of introduction / subject information sheet to the parents at their first visit after the baby had been admitted. Despite agreements with the clinical manager and NNU staff that this would be a feasible strategy, once the 'study' commenced, this

arrangement proved difficult to sustain. In consultation with the clinical manager, the alternative strategy of the 'researcher' distributing a letter of introduction / subject information sheet to parents was adopted with agreement of NNU staff.

On each occasion the 'researcher' visited the NNU, the admissions to the unit over the previous four days were reviewed. The inclusion criteria for parents were used to select the parents who were possible recruits. The letter, contained in a brown envelope with a printed label indicating that it was for the parents, was then either given to the staff member caring for the baby to pass to the parents at their next visit or the 'researcher' delivered it to the parents personally. In total, 205 letters were distributed.

If the 'researcher' personally delivered the letter, she introduced herself and indicated that she would like the parents to read the letter. No interaction between parents and the 'researcher' about the 'study' occurred at that time. At least 24 hours after the parents had received the letter, the 'researcher' consulted midwifery and NNU staff to ensure the inclusion criteria still pertained (see section 8.3.1). If there were no exclusions, the 'researcher' then attempted to make further contact with the parents to ask them to participate in the 'study'. If the parents were available and gave verbal consent, a formal written consent was signed, the parents retaining their copy (see Appendix 5), and the first stage of data generation for parents was undertaken.

Of the 205 mothers who were informed of the 'study', 55 were not asked to participate for the following reasons;

- the baby had died
- the baby had been transferred to another hospital
- another of the criteria for instability of the condition of the mother or her baby was present (see section 8.3.1)

Of the remaining 150 mothers, 77 were unavailable for participation within the 120 hours after the baby's admission. The remaining 73 mothers were asked to participate, but eight declined, giving the reason that it was inconvenient to their schedule. Therefore a total sample of 65 mothers, 11 % of the population in the NNU, was recruited over a 14 month period.

Both parents were available to the 'researcher' in 13 situations. This allowed direct contact between the 'researcher' and the parents in respect of delivery of the letter and the request for consent. In one situation the mother consented to participation but the father ignored the 'researcher' throughout, so his participation was not requested. In the remaining 12 situations, both parents consented to participation. However in one situation, having signed the consent form, the parents then decided they did not wish to continue their participation.

In the remaining 52 situations, only the mother was directly available to the 'researcher' and each consented to participation. Therefore a sample of 65 mothers was recruited, with 64 completing the first stage of data generation. While the 'researcher' had planned to make direct contact with all prospective participants, it became clear soon after the 'study' started, that direct contact with fathers was difficult to arrange, given time restrictions as well as the fathers' availability. Because the father's perspective had been absent from many of the previous studies, it was important to develop a compromise strategy to attempt to achieve some participation. Therefore, in consultation with academic supervisors, the original plan was adapted in the following way.

If no father was present when the mother was recruited, the 'researcher' asked about the father's availability in an unobtrusive way. In six cases, the father was no longer involved with the mother. In one case, the father's relationship with the mother made seeking his participation inappropriate. In 45 cases, the 'researcher' asked the participating mothers to give a package to the fathers, containing a letter of introduction / subject information sheet, the consent form and data generation tools and a return addressed envelope. In 29 cases the mother declined her partner's

participation. The remaining 16 mothers agreed to give their partner the package, which was then addressed by hand to him. If the father consented to participate, he was asked to sign the consent form, retain a copy and return the original with the completed data generations tool, in the reply envelope. There were 14 fathers who consented to participate in this way. Fathers were asked if they chose not to participate, that they should return the package intact to the 'researcher' using the return envelope. The remaining two fathers declined and complied with the request for the return of the documents. Therefore a total of 26 fathers was recruited over a 14 month period, 4% of the population, with 25 fully completing the first stage of data generation.

In the first stage of data generation the parents were given verbal instructions (directions) by the 'researcher' on the completion of the STAI self-evaluation questionnaires following precisely those offered by Spielberger et al (1983) to ensure consistency. The verbal instructions (directions) matched those printed on the STAI (see Appendix 11). The 'researcher' was careful to avoid using the word anxiety in any comments to parents, as suggested by Spielberger et al (1983).

Generally parents were able to complete STAI without further comment to the 'researcher'. If parents made comments, they were usually related to giving examples of the intensity of their feelings or to ask for clarification of words used in the questionnaire. In the latter instance, the 'researcher' referred the question back to the parent, asking them what they thought the word might mean, as recommended by Spielberger et al (1983). This usually led to confirmation of the interpretation by the 'researcher' or further probing until the word was understood.

The parents were then asked to complete the parent's questionnaire (see Appendix 12). If the parents had any prenatal preparation, the 'researcher' asked verbal supplementary open questions to clarify the nature of the preparation and the perceptions of the parents as to the usefulness of this preparation now that the baby had been admitted to the NNU. Usually parents were keen to share this information

and with some parents, this interaction developed into a conversation about the circumstances of the baby's birth and admission, and their feelings. Because the information was pertinent to the 'study', the 'researcher' made a precis of the conversation in the field notes.

Anxiety can be expressed verbally, explicitly and implicitly, and non-verbally (Caplan et al 1965, Spielberger et al 1983, Tyrer et al 1984, Allen 1995b). Therefore it was important that the 'researcher' was aware of the verbal and non-verbal behaviour of the parents during all data generation. The suggestions of Tyrer et al (1984) provided an excellent guide as to the aspects of behaviour to observe, such as hostility, lack of sleep, edginess, sweating, sighing, tense facial expression , posture or movements (see section 9.1.2.6). The field notes summarized these observations.

It was possible to write up the field notes immediately after the data generation episode when the 'researcher' was filing the appropriate copy of the consent form in the woman's obstetric records (see section 10.2.3). This strategy provided a contemporaneous record of observations that facilitated comparisons with other data, as part of the triangulation of data generation methods (Knafl and Breitmayer 1991).

After the first stage data generation from parents, the 'researcher' returned to the NNU where the baby's clinical records were accessed. The form for data on babies (see Appendix 13) was completed from these records.

The field note data, including the data from the conversations, were considered as qualitative data and were coded and analysed as soon after generation as possible in order that the findings informed subsequent data generation from parents via conversations as well as in the second stage of the data generation from parents (see sections 11.2.1 and 11.2.2).

10.2.2 Second stage

In the design, a second stage of data generation from parents was planned. It had been the intention that the 'researcher' would purposively sample parents to participate in a semi-structured, taped interview. However, soon after the start of recruitment, it became evident that most parents appeared reluctant to participate in the second stage.

In 32 instances, the parent/s explicitly declined. In 16 instances, the participants indicated their reluctance implicitly. For example, when the 'researcher' sought consent for participation in the first stage, the participants agreed, but immediately indicated that they had other things to do within a short time. These included having their own meal or feeding their baby or going home, implying that there would be no time for a formal interview. There were eight participants who made time to participate in the first stage of the data generation while visiting with their baby or with family or friends, and wanted to return to their visit immediately after the first stage was completed. In four other instances the professional judgement of the 'researcher' indicated that it would be unethical to request further participation because of the mother's clinical or emotional condition or the severity of baby's illness, therefore consent was not requested.

From the sample of 64 mothers, five mothers did not indicate either implicitly or explicitly that they were unwilling to participate in an interview and their own and their baby's condition did not preclude their participation. Therefore they were invited to participate in the interview and all five mothers gave their written consent (see Appendix 8). No fathers participated in an interview.

Because the mothers were all still in-patients, the interviews were undertaken in the mother's hospital room in the post-natal ward, the most private facility available on each occasion. In all instances the 'researcher' and the mother were alone for most of the interview. The post-natal ward staff were aware of the presence of the 'researcher' and that a taped interview was being conducted, however there were, on

occasions, brief interruptions from midwives dispensing oral analgesia, and domestic staff cleaning, setting tables for meals or serving meals. These interruptions did not interfere with the discussion within the interview as the mothers simply continued to talk through the interruptions, using non-verbal interaction with the person who had interrupted, or stopped speaking when interrupted and immediately resumed their sentence when the person who interrupted left the room. None of the mothers indicated that she felt her privacy had been invaded or confidentiality broken.

To try to maintain as relaxed an atmosphere as possible during the interview, the 'researcher' made no field notes, giving the woman her full attention. However, while concentrating on listening, responding, questioning, exploring and summarizing within the interview, there was also observation of verbal and non-verbal behaviour, using the guidance provided by Tyrer et al (1984) (see sections 9.1.2.6 and 10.2.1).

Following the same process as with the first stage of data generation, it was possible to write up the field notes immediately after the interview, when the 'researcher' was filing the appropriate copy of the consent form in the woman's obstetric records Again this provided a contemporaneous record of observations that facilitated comparisons with other data, as part of the triangulation of data generation methods (Knafl and Breitmayer 1991).

10.2.3 With each data generation episode with parents

Once each data generation episode in the first and second stage was completed with parents, a copy of the mother's consent form was placed in her clinical record. As the father was not an inpatient, the 'researcher' retained the copy. The field notes were then written. Following the guidance of Holloway and Wheeler (1996) and Tyrer et al (1984), these contained a description of the location, the impressions the parents made on the 'researcher' during the episode, the parents' non-verbal and

verbal communication with each other and the 'researcher', and any other data offered by the parents that was not included in the questionnaire and/or the interview.

The letter to the GP (see Appendix 17) giving notice of participation was then completed and sent along with a copy of the signed consent form/s.

The qualitative data were managed following the guidelines for qualitative data analysis (see section 11.2) and the analysis then informed further data generation. This cycle of concurrent data generation and analysis continued throughout this phase of the 'study'.

10.3 NNU staff

This section is divided into two sub-sections, focusing on the procedures for the first and the second stages of data generation with staff respectively.

10.3.1 First stage

It was proposed that NNU staff who cared for the babies, in the first 48 hours after admission, of parents who took part in both stages of the parents' generation would be asked to participate. However when it became clear that fewer parents than expected were likely to consent to participate in the second stage, the strategy for recruitment of NNU staff had to be adjusted. In consultation with academic supervisors, the strategy of inviting participation of NNU staff who cared for the babies, in the first 48 hours after admission, of all participating parents was agreed and commenced after the thirty second mother's recruitment.

After data generation from the mother or the mother and father, access to the baby's clinical record enabled identification of the NNU staff who cared for the baby during the first 48 hours after admission. These staff were given an introductory letter / subject information sheet about the 'study' (see Appendix 6) by the 'researcher'. At least 24 hours later, they were invited to participate in the 'study'

by the 'researcher'. If they agreed to participate in the first stage of the data generation, formal written consent was signed and they retained a copy (see Appendix 7). The staff questionnaire was completed with the 'researcher' present and it was returned directly to the 'researcher'. Conversation between the staff member and the 'researcher' was limited during data generation, but if there was any interaction, the focus was usually on specific details of how the parents had reacted to their baby's admission and how the parents were participating in caring for the baby. These data were noted on the staff questionnaire, in the form of field notes, by the 'researcher' as soon after leaving the NNU as possible.

If the NNU staff member was not on duty at the time the 'researcher' accessed the baby's clinical record, a package was left in the staff mailbox for them to access the next time they were on duty. The package contained the introductory letter / subject information sheet, the consent form, the staff questionnaire and an addressed return envelope. If they chose to participate, they were asked to sign the consent form, retain their copy and return the form along with the completed questionnaire in the envelope supplied.

There were 54 NNU staff recruited, a 64% response rate, of whom 20 participated more than once, resulting in a sample of 83 (see section 8.4.1).

10.3.2 Second Stage

Following data generation from all parents and NNU staff and preliminary analysis of the data, the second stage of the data generation from staff was undertaken. This involved participation in a taped focus group with the 'researcher' as facilitator.

Giving six weeks notice, invitations were sent to all 54 staff members who had participated in the first stage. Only one invitation was sent to the 20 members of staff who had participated more than once. Six one hour time slots were arranged, two on each of three days. Each invitation gave a choice of one time slot on each of the three days (see Appendix 9).

There were 23 (42.5%) replies, with 15 (27.7 %) staff willing to participate and eight (14.8%) staff unable to attend. There was no response from 31(57.4%) staff. In order to make each of the groups viable, four staff members were asked to alter the agreed time slot, which they were able to do.

The first focus group had six NNU staff, the second held five days later, had five NNU staff, and the third, held the next day, had only two NNU staff. The other two NNU staff due to attend the third focus group, failed to attend on the day. Therefore of the sample of 54 NNU staff, 13 (24%) participated in the second stage of data generation.

The principles of focus group conduct were adhered to (see section 9.3.2). They were held in a large private room in the place of employment of the 'researcher' that only three of the participants had not already visited. There was comfortable seating around coffee tables and soft drinks were provided. Two small tape recorders were placed on the coffee tables.

The purpose of the focus groups was explained to the participants, as was the need to tape record the conversations. It was also explained that it was hoped that the participants would discuss with each other their answers to questions that the 'researcher' would pose, but that they could also ask questions of each other. It was emphasized that the views and perceptions they expressed in discussion were very important and thus was the principal reason for getting them together as a group. Participants were assured of anonymity within the 'study' and that agreement to maintain confidentiality was expected from all participants.

The participants were asked that if they understood and agreed with the explanations and ground rules, they were to sign a consent form and retain a copy (see Appendix 10), which they all did.

With the tape recorder running, participants were asked to give their first name and tell the group what they liked to do when they were not working in the NNU. This introduction was designed to help relax the participants but also gave a reference point for voice recognition when transcribing the tapes.

A semi-structured schedule of seven questions (see Appendix 18) was asked of each group with supplementary questions and probes being asked by the 'researcher' and by the participants of each other. While the sequence of the seven questions was maintained with each group, it was not possible to keep the words exactly the same in each group because of the language the group was using. However the basic issue within each question was consistent for the groups.

When all questions had been addressed and the discussion appeared to be complete, the interactions were summarised. The participants in all groups agreed with the summary and the focus group was then closed with thanks to the participants.

Summary

The procedures used to undertake the 'study' have been explained in relation to ethical considerations, parents, babies and staff. A reminder of the original plan was included, and the alterations that had to be made during the procedures were explained. The concurrent nature of qualitative data generation and analysis was addressed.

Methods

Chapter 11

Management of the data

Introduction

In this chapter the ways in which the data were managed are discussed. There are three sections. The first two sections focus on the management of the quantitative and qualitative data respectively. The ways in which the data were prepared and then analysed are addressed in each section. In the final section there is a conclusion for all the methods' chapters.

11.1 Quantitative data

This section is divided into two sub-sections, focussing on preparation and analysis respectively.

11.1.1 Preparation

A computer statistical software package that offered spreadsheet, descriptive and inferential statistical capabilities, the Statistical Package for the Social Sciences™ (SPSS) was available on licence to the 'researcher' as an employee. All raw numerical and numerically coded data from the questionnaires completed by parents and staff were entered onto individual SPSS spreadsheets, as were the data extracted from the babies' records. Raw data from the STAIs were also entered using SPSS. The 'researcher' completed all coding and data entries. During the period of the 'study', the software was updated five times. There was no change to the stored data, however the 'researcher' had to make adjustments for the changes to other functions.

An independent colleague was asked to select seven numbers between one and 64. The 'researcher' then located the mothers' data sets corresponding to these numbers, an 11% sample. Ensuring complete anonymity of the data, the colleague and the 'researcher' checked the full data set input. A 0.14 error rate was found. The errors were corrected. A further seven data sets (11%) were selected using the same

procedure as the first. A 0.13 error rate was detected and the errors were corrected. As this was within the 0.5% error rate, it was accepted that any other errors in coding or input were likely to be random errors and unlikely to impact significantly on the results (Polit and Hungler 1989).

11.1.2 Analysis

All numerical data, apart from the STAI data, were subjected to descriptive analysis with calculation of appropriate measures of central tendency, dispersion and association. These summary statistics facilitated description of the samples and comparisons with the population. Where feasible, statistical testing was undertaken using the t- test for independent means or the one sample t-test to estimate any demographic differences between the parents who had been prepared or not prepared for their baby's admission to NNU and between the sample and the population. Chi-square tests were used when proportions were compared.

The STAI data were subjected to descriptive analysis. The data from the STAIs were divided into groups of prepared parents and unprepared parents. The mean scores and standard deviations within these groups were calculated both for state and trait anxiety. The relationship between preparedness and the differences between the sample's trait and state STAI scores were demonstrated using scatterplots and correlation tests.

From the initial descriptive analysis of the STAI data, it was evident that the original assumption, that unprepared parents would be more anxious than prepared parents, i.e. there would be an increase in mean state anxiety score of more than 10 points above the mean trait anxiety score, was refuted (see sections 13.1.3.2 and 13.2.3.2).

The data indicated that prepared and unprepared parents were more anxious, or less anxious or had little difference in their trait and state anxiety, when their baby was admitted to NNU. The definition of 'less anxious' was that the state score was more than ten points lower than the trait score, and the definition of 'no more anxious than

usual' was that the difference in state and trait scores was less than 10 points or less in either direction (see Glossary).

This finding indicated that one-tailed testing of the data would be inappropriate. The 'researcher' had experienced difficulties recruiting the required sample size of fathers to the 'study' (see section 10.2.1), therefore there were existing anxieties about the analysis. Practical constraints made the option of repeating the 'study' with a larger sample based on a power analysis using the two-tailed test impractical. However the 'researcher' had a responsibility to undertake a secondary/post hoc analysis of the data to try to understand what the data might demonstrate. Two-tailed testing and a probability level of 0.05 were therefore used and the results of these analyses are reported in chapters 12, 13 and 16. However the 'researcher' is aware of the need to interpret the results with caution, and this was taken into account when the implications for practice and the limited recommendations were being devised (see chapter 18).

11.2 Qualitative Data

This section is divided into three sub-sections, with focus in the first on data preparation. The analysis of parents' data from interviews, conversations and field notes is addressed in the second section, followed by an explanation of the analysis of the focus group data in the third section.

11.2.1 Preparation

The field notes, including data from conversations with parents, hand written after each interaction with the parents and each focus group, were transcribed to an electronic format using Microsoft Word 6.0 software™. The taped interviews with the mothers and the focus group interviews were listened to by the 'researcher' and were then transcribed verbatim to an electronic format using the same software package. During the course of the data analysis, the word processing software was updated and all data were transferred to a Microsoft Word 98 format™.

It had been the intention to use the software package "The Ethnograph"™, but technical problems resulted in its unavailability, therefore manual handling of the data was undertaken.

The tape recorded interviews and focus groups were listened to several times throughout the analysis process to verify voice intonation and interpretation of meanings, as suggested by Holloway and Wheeler (1996). They were also listened to while re-reading the transcripts. This strategy allowed checking of the transcripts against what was actually said and familiarization with the data, as suggested by Boyle (1991). The transcribed field notes were analysed with the interview and focus group data, as appropriate.

11.2.2 Analysis of parents' data from interviews, conversations and field notes

As the first interview transcript was listened to and read, along with the field note data, specific categories were identified by the 'researcher' that were coded and these categories were asked about in the subsequent interviews and in the informal conversations that took place with succeeding participants. This cycle of listening, reading, and coding continued throughout the data generation process, with previous data informing the generation of further data.

As the 'researcher' became familiar with the initial data and categories, comparisons between the categories were made. Similarities and differences in categories were identified, additional codings were made, new categories and sub-categories were identified and were included into subsequent interviews and conversations. As the process of comparison continued with further data generation, understanding the categories became clearer and new codings became fewer. Indeed, similarities between categories resulted in some being combined until eventually core categories were defined. This process followed the constant comparison guidelines suggested by Porter (1996).

There were also comparisons made throughout the data generation and analysis periods between the categories identified from the qualitative data analysis and the results of the individual parent's questionnaire and STAI data analysis to identify similarities and differences. The field note data were particularly helpful when assessing parental anxiety using comparisons between quantitative and qualitative data. This triangulation enabled cross-validation of the interpretations of the parents' data, and enhanced the credibility of the analysis (Knafl and Breitmayer 1991, Robson 1993), although there were incongruities in the data (see chapter 15).

11.2.3 Analysis of the focus group interviews

The printed version of each focus group's transcript was read at the same time as listening again to the taped proceedings. This strategy allowed checking of the transcript against what was actually said and familiarization with the data (Boyle 1991). The data from the field notes, made immediately after each focus group, were read after the pertinent focus group transcript, adding to the understanding of the data.

Because the three focus groups were held within a seven-day period, undertaking a full process of constant comparison analysis was not possible. However after each of the first two focus groups, it was possible for the 'researcher' to listen to the tapes and make a preliminary analysis of what had been said. Reading the field notes pertinent to the two groups added to the understanding of the data.

Once all three focus groups had been held, the 'researcher' analysed the transcript and field note data more fully, identified categories, coded them, compared the categories across the three transcripts, and developed further codings, categories and sub-categories. The categories were compared with the quantitative data analysis of the staff questionnaire to achieve triangulation (Knafl and Breitmayer 1991, Robson 1993). Eventually categories were combined and core categories were identified.

Summary

The ways in which data were managed by the 'researcher' have been explained and justified. When available, electronic technology was very helpful in these processes, but careful manual handling and sorting of data were also required.

11.3 Conclusion

In this section, there is a conclusion to all of the chapters in which the methods used to undertake the 'study' were addressed. In chapter six, qualitative and quantitative approaches were discussed. The rationale for requiring both was given and the choices of a quantitative approach and a phenomenological approach were justified. A similar format was used in chapter seven, where the descriptive, comparative design was justified.

In chapter eight, the sampling techniques of convenience, self-selection and purposive sampling used to recruit parents, NNU staff and babies were explained and justified. There was also some explanation of why execution of some of the planned sampling techniques were, in part, unsuccessful.

Description and justification of the data generation tools chosen were included in chapter nine. In relation to parents, the tools were a 'researcher-designed' questionnaire and a semi-structured interview. A 'researcher-designed' questionnaire was chosen to document data extracted from the babies' records. In relation to the NNU staff, the tools were a 'researcher-designed' questionnaire and focus groups. Field notes documented after the first and second stages of data generation from parents and staff, augmented the other data.

Chapter 10 focused on the procedures used to undertake the 'study'. Of importance was the explanation of the ethical considerations that guided the 'study'. The procedures used to generate data with parents, their babies, and NNU staff were

explained. Problems were encountered with execution of the original plan and deviations were made. The problems and the deviations were explained.

In chapter 11, data management techniques were discussed, both quantitative and qualitative. The use of SPSS was explained along with the manual processing of the data.

The methods planned and executed in the 'study' have been explained. The research objectives and questions guided the choices made throughout the planning phase and when undertaking the procedures.

Findings

Chapter 12

Introduction to the presentation of findings

Having discussed the ways in which the data were managed in chapter 11, the findings are presented in the following five chapters. The quantitative and qualitative data analyses related to the parents and babies are presented in the first four chapters, followed by the quantitative and qualitative data analyses related to the staff in the next chapter. This method of presentation was chosen to facilitate reading, but also in an effort to maintain the integrity of the participants as complete individuals, rather than have the findings divided by the research methods used to generate and analyse the data.

This overall introduction includes an explanation of how the participants are identified in the report and also the conventions for the presentation of numerical findings. This chapter continues with an introduction to the findings related to parents and their babies and then the findings from the analysis of data from the parents' questionnaire and the data from the babies' records are presented, including descriptions of the samples. Chapter 13 contains the findings from the analysis of the STAI data. In chapter 14, the findings from the analysis of the parents' qualitative data are presented with reference, where relevant, to the literature that guided the qualitative data analysis and data generation. Chapter 15 contains a discussion of the congruity and incongruity of qualitative and quantitative data related to parents. In chapter 16 there is description of the NNU staff sample and presentation of the findings from the analysis of their questionnaire data along with an analysis of the focus group data with reference, where relevant, to literature that guided the qualitative data analysis and data generation.

While discussions of the qualitative findings are within chapters 14 and 16, further discussion of the findings is in chapter 17.

Throughout the presentation of findings, the preparedness of parents refers to the

extent to which parents were prepared in the prenatal period for the experience of NNU (Caplan et al 1965) (see Glossary). Parents are referred to as being either prepared or unprepared. Prepared parents had previous personal and/or other experience of NNU and/or had been given information in the prenatal period about NNU. Prenatal information includes verbal and/or written material and/or a prenatal visit to the NNU. Unprepared parents had no experience of NNU, had been given no information about NNU, nor had visited NNU prior to the baby's admission.

The aspects of confidentiality and anonymity were held paramount. No individual participant is recognizable and no names are used. However, because there were four different samples, the use of a pseudonym for each participant was considered too complex. Therefore a letter and number system was devised to identify the participants. The system is diagrammatically presented in table 12.1 and is explained as follows.

Table 12.1

Summary of the conventions used to identify the participants
(Hypothetical first participating mother is used as an example)

first participating mother	m1
first participating mother's partner	f1
baby of the first participating mother	b1
if the first participating mother had given birth to twins, the abbreviations for the babies	b1 I and b1 II
member of NNU staff who cared for the baby	s1

In the chronological order of her recruitment to the 'study', each mother is identified only by a number prefixed by the letter 'm', i.e. m1, m2, through to m64. The participating fathers are identified using the prefix 'f' and the number that identified

the mother. Therefore if the fathers of m1 and m2 participated, they are identified as f1 and f2.

The babies of participating mothers are identified by the prefix 'b' and the number that identified their mother. Therefore the baby of m1 is identified as b1. If twins are referred to, there will be a suffix of 'I' or 'II' to represent the birth order. Therefore if m1 had given birth to twins, her babies would be referred to as b1 I and b1 II.

Each member of NNU staff is identified by a number in order of their recruitment, prefixed by the letter 's'. Therefore the first and second members of NNU staff recruited are referred to as s1 and s2. As staff were recruited, they were assigned a number from one to 83. Several staff participated more than once, and although they were assigned a consecutive number in the data base, they are always referred to by the number of their original recruitment in the written report. For example, if s1 was recruited three times, she could be listed in the data base as s1, s14 and s60, but is always be referred to as s1 throughout the written report.

Quantitative data were descriptively analysed using the SPSS software package, and where inferential testing was relevant, two tailed tests and a probability level of 0.05 were *used*. If the inferential test results are statistically not significant (ns), the value of the statistic, and degrees of freedom (df), if relevant, will be noted and the abbreviation ns given rather than the exact level of probability (p). To facilitate ease of reading and comprehension, if the findings of inferential testing indicate statistical significance, the probability level will be identified using the following conventions. Exact p values of 0.05, 0.01 or 0.001 will be identified as such e.g. $p = 0.05$. Any other values will be identified as less than (<) 0.05, 0.01 or 0.001, e.g. if the p value is 0.04, it will be identified as $p = < 0.05$.

Generally other findings are presented with correction to the first or second decimal place, where relevant. However, because the samples were relatively small, i.e. less

than 100, specific consideration was given to the use of percentages. While their use can give potentially deceptive accuracy, percentages were judged as helpful when used as a common denominator for the comparisons that were made in the analyses. Therefore, throughout the thesis, when the total samples are discussed, both numbers and percentages are given, where relevant, in the written report, in the tables, and in the figures. The percentages are rounded, therefore totals may exceed 100.

In many instances there is referral to the sub-samples and sub-groups of the total samples. When the findings of sub-samples and sub-group are referred to in writing, descriptions of proportions are used rather than percentages. However in the tables and figures where sub-samples or sub-groups of samples are referred to as well as the total samples, percentages relate to the total sample, not the sub-samples or sub-groups. In tables related to only sub-samples or sub-groups, percentages will not normally be included. Caution was taken when interpreting the percentage figures, especially in relation to the fathers' data.

Continuous data were usually categorised, both in the data base and the thesis. Therefore age, birth weight, length of NNU experience were transformed from the raw data into categories, e.g. if a mother gave her age as 17 years and 5 months, it would be categorised as 17.5 in the data base and as within the range of 15-19.75 years in the thesis. This strategy did not reduce the accuracy of the data but was used to simplify calculations and the presentation of findings.

Introduction to the findings related to parents and their babies

In this chapter the findings from the analysis of the data from the parents' questionnaires and from their babies' records are presented in four sections. In the first section, the characteristics of the mothers are presented in three sub-sections, focusing on demographic and other characteristics, preparedness for NNU care, and sources and content of prenatal information. In the second section the characteristics

of the sub-sample of mothers are presented in two sub-sections that focus on demographic characteristics and preparedness for NNU care.

The format used in section one is repeated in section three in relation to the characteristics of the sample of fathers and their preparedness. In the fourth section, the characteristics of the babies of the participating parents are described.

During recruitment and data generation there were 593 babies admitted to the NNU. Therefore these babies are the population for the 'study'. Their parents are the populations of mothers and fathers for the 'study'. Some population data were available to the 'researcher' on request. Convenience, purposive and self-selected samples are unlikely to be representative of populations (Robson 1993). However in the analysis, to assess the extent of similarity of the samples and the populations, comparisons were made, if data were available. Such comparisons helped assess any differences between non-participants and participants.

The final section is a summary of the findings presented in the chapter.

Characteristics of parents and their babies

12.1 Mothers

As indicated in section 10.2.1, 205 mothers were informed of the 'study' by introductory letter. Of these, 55 were not subsequently asked to participate because the baby had died, or the baby had been transferred to another hospital, or the criteria for instability of the condition of the mother or her baby were present (see section 8.3.1). A further 77 were unavailable for participation within the 120 hours after the baby's admission. The remaining 73 mothers were asked to participate, and eight declined. Therefore a total sample of 65 mothers, 11 % of the population in the NNU, was recruited over a 14 month period, although only 64 completed the first stage of data generation. The findings from the analysis of the parent's questionnaire that the mothers completed are reported in this section.

12.1.1 Demographic and other characteristics

Mothers were recruited from one regional referral NNU whose main catchment area is Lothian, but babies are transferred in from Fife, the Borders, and occasionally from other Scottish health board areas and from other countries. During the data collection period for the 'study', the majority of the population had addresses in Lothian, with 20 babies transferred from Fife. Although 65 mothers consented to participate in the 'study', only 64 mothers completed the parents' questionnaire and were designated as the sample. The majority of mothers, 60 (94%), gave Lothian addresses, in both rural and urban areas. The remaining four mothers, (6%), gave addresses in Fife. Therefore the sample had a geographic basis similar to that usually found in the NNU, and to the population during the 'study'.

The demographic and other characteristics are summarized in table 12.2. To demonstrate the distribution of ages of the sample, age ranges are presented as written results and are included in table 12.2. However, inferential testing was done on the mean age of the sample and the population and only written findings are given.

The ages of the participating mothers ranged from 16 – 41.5 years with a mean of 30.7 years (SD 6.1 years). The modal age range was 30 – 34.75 years, with 28 (44%) mothers in that age range. In the population data, 540 (91%) mothers' records included age. The population range was 15 – 44 years with a mean of 29.2 years. There was no significant difference between the mean age of the sample and population ($t = 1.93$ $df = 63$; ns). Therefore sample and population were similar in age and age range.

Table 12.2

Mothers' demographic and other characteristics with number of mothers (%) in each category

Demographic characteristic	Category	Number (%) of mothers
Age range	15 – 19.75	4 (6)
	20 – 24.75	7 (11)
	25 – 29.75	10 (16)
	30 – 34.75	28 (44)
	35 – 39.75	12 (18)
	40 – 44.75	3 (5)
Marital status	single	8 (12)
	married	41 (64)
	divorced	1 (2)
	cohabiting	13 (20)
	other	1 (2)
Age leaving school	15 years	4 (6)
	16 years	35 (55)
	17 years	18 (28)
	18 years	7 (11)
Post-school education	none	26 (42)
	one type	28 (45)
	two or more types	8 (13)
Employment status	unemployed	2 (3)
	employed	47 (73)
	never employed	1 (2)
	housewife	14 (22)
Number of pregnancies (including the one just completed)	1	34 (53)
	2	19 (30)
	3	3 (4)
	4	5 (8)
	6	2 (3)
	8	1 (2)
Time of data generation in hours after baby's admission to NNU (days)	***within 24 hours (day 1)**	**1(2)**
	between 25 and 48 hours (day 2)	**13 (20)**
	between 49 and 72 hours (day 3)	**17 (27)**
	between 73 and 96 hours (day 4)	**22 (34)**
	between 97 and 120 hours (day 5)	**11(17)**

* = Research protocol indicated that parents receive information and a period of 24 hours then elapse before data generation. One mother was being discharged but requested to participate and complete data generation within the 24 hour period.

Of the 64 mothers, the majority 41 (64%) were married, eight (12%) were single, 13 (20%) were cohabiting, one (2%) was divorced and one (2%) reported herself as other (see table 12.2). In the population data, 434 (73%) mothers' records included marital status. A single status was recorded for 32% of the 434 mothers, 67% were married and 1% were separated, divorced or widowed. The percentages of mothers who were married in the population and the sample were similar. The percentage of mothers in the sample who were single was much smaller than the percentage in the population. However the population data had no cohabiting category. Summing the percentages of single and cohabiting mothers in the sample, 32%, gave a percentage that matched that of the population, 32%. Therefore the sample and population were similar in marital status.

A minority of mothers, 4 (6%) left school aged 15 years, the majority, 35 (55%), left school aged 16 years, 18 (28%) left when they were aged 17 years and 7 (11%) left aged 18 years (see table 12.2). Of the 62 mothers who indicated what post-school education they had engaged in, 26 (42%), had engaged in none. There were 28 (45%) who had experienced one type, and the remaining eight (13%) had experienced a combination of two or three types of post-school education (see table 12.2). There were no population data available for comparison, however there was a spread of educational experience across the sample mothers.

Of the 64 mothers, the majority, 47 (73%), indicated that they were employed. Only one (2%) indicated she had never been employed, because she had been attending secondary school before leaving to give birth to her baby, and two (3%) were unemployed (see table 12.2). The answers to this question gave the mothers the choice of identifying the job of housewife, and 14 (22%) indicated that this was the only job they undertook. However 9 (14%) mothers indicated this was a job they undertook along with their other employment. In the population data, 477 (80%) mothers' records included an employment status. There were 71% mothers employed, 10% unemployed and 19% identified as housewives. Proportionately more mothers in the population were unemployed, possibly due to the lower age

range limit of 15 years, however the percentage in employment and housewives were similar. There was therefore a range of employment status in the sample similar to the population.

The majority of mothers, 34 (53%), had just completed their first pregnancy. There were 19 (30%) mothers who had just completed their second pregnancy. Fewer mothers, three (4%) and five (8%), had just completed their third and fourth pregnancy respectively. Only two (3%) had just completed their sixth pregnancy, and one (2%) had just completed her eighth pregnancy (see table 12.2). The gravid status of the population was not available to the 'researcher'. However there was a range of gravid status in the sample that reflected trends in the general population for women to have fewer pregnancies, and for babies of women with higher gravid status to require admission to NNU (Sweet 1997).

Mothers participated across a variety of time slots. The range of time slots was from one to five days, i.e. four days, with a mean of three and one half days, a median of four days, and a mode of four days.

12.1.2 Preparedness for NNU care

Of the 64 mothers, 45 (70%) indicated that they had no previous experience of NNU. There were 19 (30%) who had either had a previous baby or babies in NNU or had close family or friends whose babies had been cared for in NNU (see table 12.3).

Mothers were asked whether there had been any information given during the pregnancy about NNU care. For 46 (72%) there had been no such intervention but information had been given to 18 (28%) mothers (see table 12.3).

Therefore 36 (56%) mothers had neither previous experience of NNU nor had been given information about NNU care. These mothers were therefore unprepared for their baby's admission to NNU (see table 12.3).

There were 28 (44%) mothers who considered themselves to be prepared. Of these prepared mothers, approximately one third (9), had both types of preparation, previous experience and prenatal information, approximately one third (10), had only previous experience and the remaining approximate one third (9) had only been given prenatal information. The differences between the proportions of prepared and unprepared mothers were significant ($\chi^2 = 4.95$ df = 1; p = <0.05) (see table 12.3).

Table 12.3

Number (%) of mothers with previous experience of NNU or not and mothers who had prenatal information or not

	Number (%) of mothers given prenatal information	Number (%) of mothers not given prenatal information	Total (%)
Number (%) of mothers with previous experience	9 (14)	10 (16)	19 (30)
Number (%) of mothers with no previous experience	9 (14)	36 (56)	45 (70)
Total (%)	18 (28)	46 (72)	64

($\chi^2 = 4.95$ df = 1; p = <0.05)

To understand more of the preparedness of the mothers, whether the mother was prepared or unprepared, or prepared in different ways, was compared to other variables. The following four sub-sections present the findings in relation to preparedness and demographic and other characteristics, time of participation, expectation of, and warning of the baby's admission.

12.1.2.1 Preparedness and demographic and other characteristics

Comparisons of the characteristics of the prepared and unprepared mothers were undertaken. None of the four mothers from Fife was prepared. The mothers' characteristics were also classified according to the type of preparation they had received, i.e. prenatal information and/or previous experience of NNU (see table

12.4). Because the number of mothers in some classifications was small, percentage calculations were not undertaken.

The majority of mothers in the prepared and unprepared groups, and those prepared in different ways were married, had left school aged 16 years, were employed, had no or one type of post-school education, and had a gravid status of one or two (see table 12.4).

To demonstrate the distribution of ages of the sample, age ranges are presented as written results and are included in table 12.4. However, inferential testing was done on the mean age of the samples and only written findings are given. Most of the mothers who were prepared and unprepared, and prepared in different ways, were in the age ranges above 30 years of age. No prepared mothers were in the age range of 40 – 44.75 years and only one unprepared mother was in the age range of 15 – 19.75 years (see table 12.4).

The difference between the mean age of the prepared mothers, 29.87 years (SD 5.83), and unprepared mothers, 31.29 years (SD 6.30) was not significant ($t = 0.93$ $df = 62$; ns). There was no significant difference between the mean age of the mothers who had been given prenatal information, 29.56 years (SD 6.7), and those not given such information, 31.10 years (SD 5.87) ($t = 0.91$ $df = 62$; ns). There was no significant difference between the mean age of the mothers with previous experience, 30.41 years (SD 5.23), and those without such experience, 30.78 years (SD 6.48) ($t = 0.22$ $df = 62$; ns).

In the category of marital status, there were no significant differences between the proportions of prepared and unprepared mothers ($\chi^2 = 2.3$ $df = 4$; ns), mothers given prenatal information or not ($\chi^2 = 5.28$ $df = 4$; ns), or between mothers with previous experience or not ($\chi^2 = 1.02$ $df = 4$; ns) (see table 12.4).

Table 12.4

Mothers' demographic characteristics with number of prepared and unprepared mothers and type of preparation

Demographic characteristic	Category	Number of mothers			
		Unprepared	Prepared	Type of preparation	
				I	E
Age range	15 – 19.75	1	3	3	1
	20 – 24.75	5	2	1	1
	25 – 29.75	5	5	3	4
	30 – 34.75	16	12	6	9
	35 – 39.75	6	6	5	4
	40 – 44.75	3	0	0	0
Marital status	single	4	4	4	4
	married	24	17	10	13
	divorced	1	0	0	0
	cohabiting	7	6	3	4
	other	0	1	1	0
Age leaving school	15 years	3	1	1	1
	16 years	18	17	10	12
	17 years	11	7	5	4
	18 years	4	3	2	2
Post-school education (2 missing values)	none	11	15	10	10
	one type	17	11	6	8
	two or more types	7	1	1	0
Employment status	unemployed	0	2	2	1
	employed	30	17	11	11
	never employed	0	1	1	1
	housewife	6	8	4	6
Number of pregnancies (including the one just completed)	1	10	24	7	6
	2	11	8	8	6
	3	2	1	1	2
	4	3	2	1	3
	6	2	0	1	2
	8	0	1	0	0

I = prenatal information
E = previous experience of NNU

In the category of age leaving school, there were no significant differences between the proportions of prepared and unprepared mothers ($\chi^2 = 1.42$ df = 4; ns), mothers

given prenatal information or not ($\chi^2 = 0.44$ df = 4; ns), or between mothers with previous experience or not ($\chi^2 = 1.28$ df = 4; ns) (see table 12.4).

In the category of post-school education status, there were no significant differences between the proportions of prepared and unprepared mothers ($\chi^2 = 9.8$ df = 4; ns), mothers given prenatal information or not ($\chi^2 = 4.95$ df = 9; ns), or between mothers with previous experience or not ($\chi^2 = 6.02$ df = 9; ns) (see table 12.4).

Significantly more mothers given prenatal information were employed than those not given information ($\chi^2 = 8.19$ df = 3; p = <0.05). However, there were no significant differences in this category for mothers who had previous experience or not ($\chi^2 = 4.82$ df = 3; ns), or between prepared and unprepared mothers ($\chi^2 = 5.98$ df = 3; ns) (see table 12.4).

As expected, significantly more mothers having their first baby had no previous experience of NNU ($\chi^2 = 11.72$ df = 5; p = <0.05). However, there were no significant differences in this category for mothers who had prenatal information or not ($\chi^2 = 3.86$ df = 5; ns), or between prepared and unprepared mothers ($\chi^2 = 8.91$ df = 5; ns) (see table 12.4).

Therefore there were significant differences in relation the employment status of mothers given prenatal information or not, and number of pregnancies for mothers with previous experience. However in the remaining categories, differences between mothers who were prepared or not, and those prepared in different ways were not significant. Therefore the sub-groups were considered sufficiently similar to allow for comparisons to be made (see table 12.4).

12.1.2.2 Preparedness and time of participation

The prepared and unprepared mothers participated across a variety of time slots (see table 12.5). One prepared mother, given information only, requested to participate

within 24 hours. There was equal distribution of the number of mothers given prenatal information across the other four time slots (two in each). There were two modal time slots, with four mothers in each, for mothers who had only previous experience, 49 – 72 hours and 73 – 96 hours, and none of the mothers prepared in this way participated in the 97 – 120 hour time slot.

Table 12.5

Number of prepared and unprepared mothers, and those mothers prepared in different ways, in each time frame after the baby's admission when data were generated

	Prepared mothers				Unprepared mothers
Time of data generation in hours after baby's admission to NNU	Number who had been given only prenatal information about NNU	Number who had only previous experience of NNU	Number who had been given prenatal information and who had previous experience of NNU	Totals	Number who were unprepared
*Within 24 hours	1	0	0	1	0
Between 25 and 48 hours	2	2	2	6	7
Between 49 and 72 hours	2	4	2	8	9
Between 73 and 96 hours	2	4	2	8	14
Between 97 and 120 hours	2	0	3	5	6
Totals	9	10	9	28	36
	64				

* = Research protocol indicated that parents receive information and a period of 24 hours then elapse before data generation. One mother was being discharged but requested to participate and complete data generation within the 24 hour period.

The modal time slot for mothers with both types of preparation was between 96 and 120 hours, with three mothers participating then. The same number of mothers with both types of preparation (2) participated in the three time slots between 24 and 96 hours but none participated in the first 24 hours. There were two modal time slots for the participation of 25 prepared mothers, eight in each, between 48 and 72 hours and between 73 and 96 hours (see table 12.5).

There were more unprepared mothers in the sample, 36. No unprepared mothers participated within the first 24 hours. The modal time slot for unprepared mothers (14) was between 73 and 96 hours and the smallest number (6) participated between 96 and 120 hours (see table 12.5).

The pattern of participation indicated that prepared and unprepared mothers, and mothers prepared in different ways, participated across the time slots. Apart from one mother given prenatal information, who participated in the first 24 hours, a similar pattern of participation was noted for prepared and unprepared mothers, and those prepared in different ways, in each of the time slots. The highest proportions of prepared and unprepared mothers participated between 48 and 72 hours and between 73 and 96 hours (see table 12.5). The pattern of participation did not appear to indicate bias, allowing comparisons to be justifiable.

12.1.2.3 Preparedness and expectation of baby's admission

Of the 16 (25%) mothers who expected their baby to be admitted to NNU, half of them had previous experience of NNU. Of the 48 (75%) mothers who had not expected their baby to be admitted, fewer than one in four, 11, had previous experience. Therefore the majority of mothers, 37 (58%) had not expected their baby to be admitted and had no previous experience of NNU. These differences were significant ($\chi^2 = 4.22$ df = 1; p = <0.05) (see table 12.6).

Table 12.6

Number (%) of mothers who had expected baby's admission or not and those who had previous experience of NNU or not

	Number (%) of mothers with previous experience	Number (%) of mothers with no previous experience	Total (%)
Number (%) of mothers who expected baby's admission	8 (13)	8 (13)	16 (25)
Number (%) of mothers who did not expect baby's admission	11 (17)	37 (58)	48 (75)
Total (%)	19 (30)	45 (70)	64

(χ^2 = 4.22 df = 1; p = <0.05)

Of the 16 (25%) mothers who expected their baby to be admitted to NNU, more than half, 10 mothers, had been given prenatal information about NNU. Of the 48 (75%) mothers who had not expected their baby to be admitted, only one in six of them, eight mothers, had been given prenatal information about NNU. Therefore the majority of mothers, 40 (63%), had not expected their baby to be admitted, and had been given no prenatal information about NNU. This finding was highly significant (χ^2 = 12.47 df = 1; p = 0.001) (see table 12.7).

Table 12.7

Number (%) of mothers who had expected baby's admission or not and those who were given prenatal information about NNU or not

	Number (%) of mothers who were given prenatal information	Number (%) of mothers who were not given prenatal information	Total (%)
Number (%) of mothers who expected baby's admission	10 (16)	6 (9)	16 (25)
Number (%) of mothers who did not expect baby's admission	8 (13)	40 (63)	48 (75)
Total (%)	18 (29)	46 (72)	64

(χ^2 = 12.47 df = 1; p = 0.001)

Of the 16 (25%) mothers who had expected their baby's admission, the majority, 13, were prepared (see table 12.8). There were 48 (75%) mothers who had not expected their baby's admission. Of these, two thirds, 33, were unprepared. The majority of admissions to NNU were therefore unexpected and the majority of the mothers were unprepared. This finding was highly significant ($\chi^2 = 12.19$ df = 1; p = 0.001) (see table 12.8).

Table 12.8

Number (%) of mothers who expected baby's admission or not and whether they were prepared or not

	Number (%) of mothers who were prepared	Number (%) of mothers who were unprepared	Total (%)
Number (%) of mothers who expected baby's admission	13 (20)	3 (5)	16 (25)
Number (%) of mothers who did not expect baby's admission	15 (25)	33 (50)	48 (75)
Total (%)	28 (45)	36 (55)	64

($\chi^2 = 12.19$ df = 1; p = 0.001)

12.1.2.4 Preparedness and warning of baby's admission

Table 12.9

Number of mothers with a specified length of warning of their baby's admission to NNU and whether they had previous experience of NNU or not

Length of warning	Number of mothers who had previous experience of NNU	Number of mothers who had no previous experience of NNU	Total
minutes	1	9	10
hours	4	8	12
days	3	5	8
weeks	3	4	7
Total	11	26	37

While 16 (25%) mothers expected their baby to be admitted, when all mothers were asked how much warning of their baby's admission they received, 37 (58%) mothers

answered. The length of warning ranged from minutes to hours, to days to weeks, with most mothers having only minutes or hours of warning. These data were not subjected to inferential testing because of the small number in each category. Of the 37 mothers given warning, descriptively, the majority, 26, had no previous experience (see table 12.9).

Of the 37 (58%) mothers who had warning of their baby's admission, the majority, 22, had been given no prenatal information about NNU (see table 12.10).

Table 12.10

Number of mothers who had a specified length of warning of their baby's admission to NNU and whether they were given prenatal information or not

Length of warning	Number of mothers who were given prenatal information	Number of mothers who were not given prenatal information	Total
minutes	3	7	10
hours	5	7	12
days	2	6	8
weeks	5	2	7
Total	15	22	37

Table 12.11

Number of mothers who had a specified length of warning of their baby's admission to NNU and whether they were prepared or not

Length of warning	Number of mothers who were prepared	Number of mothers who were not prepared	Total
minutes	3	7	10
hours	8	4	12
days	3	5	8
weeks	6	1	7
Total	20	17	37

Of the 37 (57.8%) mothers who had warning of their baby's admission, the majority, 20, were prepared either through previous experience and/or prenatal information. However, only slightly fewer mothers, 17, were unprepared for their baby's admission, despite having warning of it (see table 12.11).

12.1.3 Sources and content of prenatal information given to mothers

In section 12.1.2, it was reported that 18 (28%) mothers were given prenatal information about NNU care. However when all mothers were asked to identify the source/s of prenatal information, 20 (31%) mothers responded. Of the 20 mothers, almost three quarters, 14 mothers, were given information by a midwife, a tour of the NNU prenatally was experienced by eight mothers, and eight mothers had information given by the neonatologist. Mothers identified more than one source, therefore numbers total more than 20.

Mothers acknowledged that the content of the information included what would happen at the birth, where the baby would be taken, and what problems there were likely to be.

12.2 Sub-sample of mothers

There were five (8%) mothers who consented to participate in a taped, semi-structured interview. The findings of the descriptive analysis of their quantitative data are presented in three sub-sections. Because of the small sub-sample numbers, inferential testing was not undertaken.

12.2.1 Demographic and other characteristics

The characteristics of the mothers in the sub-sample are summarised below and in table 12.12. There was comparison with the sample of 64 mothers to identify if there was any bias in the sub-sample. Three of the mothers were prepared and two were unprepared. Referral to tables 12.12 and 12.2 may aid understanding of the comparisons.

Table 12.12

Sub-sample mothers' demographic and other characteristics with number of mothers in each category

Demographic characteristics	Category	Number of mothers
Age range	15 – 19.75	1
	30 – 34.75	3
	35 – 39.75	1
Marital status	single	1
	married	4
Age leaving school	15 years	1
	16 years	2
	17 years	1
	18 years	1
Post-school education	none	1
	one type	2
	two or more types	2
Employment status	unemployed	1
	employed	3
	housewife only	1
Number of pregnancies (including one just completed)	1	2
	2	2
	4	1

The sub-sample consisted of mothers from a range of ages similar to the age range in the sample. The age range of the sample was 16 – 41.5 years (25.5 years) and the age range of the sub-sample was 16.25 – 37.25 years (21 years). The mean age of the sub-sample was 30.4 years, and the mean age of the sample was very similar at 30.7 years. Like the sample, the majority of the mothers in the sub-sample were aged between 30 and 34.75 years (see table 12.12).

All but one of the sub-sample of mothers was married, a majority similar to the sample. There were two mothers who left school aged 16 years, and the others left aged 15, 17 and 18 years. One mother had just left school, two had engaged in one type of post school education, while the other two mothers had engaged in three

types of post school education (see table 12.12). Therefore there was a range of educational experience in the sub-sample similar to the sample.

Like the sample, the majority of the sub-sample mothers (3), were employed. One of the other two mothers was unemployed and the other gave her status as housewife. This status was also indicated by one of the mothers who was also employed outside the home (see table 12.12).

There were two mothers who had just completed their first pregnancy, two their second pregnancy, and one had just completed her third pregnancy. While there were no mothers who had experienced more than four pregnancies in the sub-sample, these mothers did have a range of gravid status.

12.2.2 Preparedness for NNU care

Table 12.13

Number of mothers in sub-sample with previous experience of NNU or not and mothers who had prenatal information or not

	Number of mothers given prenatal information	Number of mothers not given prenatal information	Total
Number of mothers with previous experience	1	0	1
Number of mothers with no previous experience	1	3	4
Total	2	3	5

There were two prepared mothers in the sub-sample. One had previous experience of NNU and she had also been given prenatal information. The other mother had been given prenatal information about NNU (see table 12.13). Three mothers had no previous experience and received no prenatal information (see table 12.13). Therefore, as in the sample, the majority of mothers in the sub-sample were unprepared for their baby's admission to NNU.

12.2.2.1 Preparedness and demographic and other characteristics

With one exception, a 16.25 year old, all the mothers in the sub-sample were in the age categories of 30 – 39.75 years. The range of ages of the unprepared mothers was 32 – 37.25 years, i.e. 5.25 years, with a mean of 25.13 years. The range of ages of the prepared mothers was 16.25 – 34 years, i.e. 17.75 years, with a mean of 33.91 years (see table 12.14).

Table 12.14 summarises the demographic and other characteristics of the prepared and unprepared mothers, including differentiation between the types of preparation. One of the two prepared mothers was single had received prenatal information. The other prepared mother, who had previous experience and had also received information, was married. The unprepared mothers were married.

The married prepared mother left school when she was 18 years, had engaged in one type of post-school education and considered herself to be a housewife. The single prepared mother left school at 16 years, had not participated in post-school education, but had been employed. The three unprepared mothers had left school aged 15, 16 and 17 years, had engaged in one or more types of post-school education, were employed and one considered herself also a housewife (see table 12.14). This spread of characteristics is similar to that identified for the full sample. The gravid status of the unprepared mothers was one, two and four pregnancies. The one mother who had both prenatal information and previous experience had a gravid status of two. The mother with prenatal information had a gravid status of one (see table 12.14). Therefore a range of gravid status was represented and the types of preparedness in the sub-sample reflected those found in the full sample.

Table 12.14

Sub-sample mothers' demographic and other characteristics with number of prepared and unprepared mothers and type of preparation

Demographic characteristic	Category	Number of mothers			
		Unprepared	Prepared	Type of preparation	
				I	E
Age range	15 – 19.75	0	1	1	0
	30 – 34.75	2	1	1	1
	35 – 39.75	1	0	0	0
Marital status	single	0	1	1	0
	married	3	1	1	1
Age leaving school	15 years	1	0	0	0
	16 years	1	1	1	0
	17 years	1	0	0	0
	18 years	0	1	1	1
Post-school education	none	0	1	1	0
	one type	1	1	1	1
	two or more types	2	0	0	0
Employment status	employed	3	1	1	0
	housewife	1	1	1	1
Number of pregnancies (including one just completed)	1	1	1	1	0
	2	1	1	1	1
	4	1	0	0	0

12.2.2.2 Preparedness and time of participation

The sub-group of prepared and unprepared mothers also participated across a variety of time slots and no bias was indicated.

The unprepared mothers participated between 25 and 48 hours, 73 and 96 hours and 97 and 120 hours. The mother who had been given information participated between 49 and 72 hours and the mother who had information as well as previous experience participated between 73 and 96 hours (see table 12.15).

Table 12.15

Number of sub-sample prepared and unprepared mothers, and those mothers prepared in different ways, in each time frame after the baby's admission when data were generated

Time of data generation in hours after baby's admission to NNU	Prepared mothers			Unprepared mothers
	Number who had been given only prenatal information about NNU	Number who had been given prenatal information and who had previous experience of NNU	Totals	Number who were unprepared
Between 25 and 48 hours	0	0	0	1
Between 49 and 72 hours	1	0	1	0
Between 73 and 96 hours	0	1	1	1
Between 97 and 120 hours	0	0	0	1
Totals	1	1	2	3
	5			

12.2.2.3 Preparedness and expectation and warning of baby's admission

Only two of the five mothers expected their baby to be admitted to NNU, one had four weeks warning and the other had three days warning. The mother who had four weeks warning had no experience of NNU, but was given information about NNU from the neonatologist and from NNU staff during a tour of the NNU. The other mother had warning of her baby's admission, but was given no information and had no experience of NNU.

Two of the mothers, who had not expected their baby to be admitted, had no experience and were given no information. The third mother, who had not expected

her baby's admission to NNU, had previous experience of NNU and had read the information in the hospital booklet.

Therefore three mothers, the majority, in the sub-sample had not expected their baby to be admitted to NNU. One mother who expected admission and two mothers, who did not, a majority, were unprepared for the admission. These findings are similar to those found in the sample.

Summary

One disadvantage of self-selected, purposive and convenience samples is bias (Robson 1993). However analysis of the characteristics of the sub-sample and comparison with the sample, suggests they were similar, with a range of characteristics. The sub-sample is not representative of the sample or of the population, but consists of mothers who were considered relevant to the 'study'. In particular, there was a spread of preparedness within the sub-sample. Three mothers were unprepared, and the other two were prepared in different ways.

12.3 Fathers

The recruitment strategy for fathers is explained in detail in section 10.2.1 and therefore will only be summarised here. There were 12 fathers recruited directly and 14 recruited by post, resulting in a sample of 26. However only 25 fathers completed the parents' questionnaire, 4% of the population. The father who did not complete the questionnaire was directly recruited. The findings from the analysis of the questionnaire that the fathers completed are reported in this section.

12.3.1 Demographic and other characteristics

The majority of fathers 24 (96%) gave addresses in Lothian, in both rural and urban areas, with one (4%) father giving a Fife address. As indicated in section 12.1.1, the majority of the NNU population of parents gave addresses in Lothian, with a small number from Fife. Therefore, as expected the fathers' sample had a geographic basis similar to the mothers' sample and to the population.

The demographic and other characteristics of the fathers are given in table 12.16. To demonstrate the distribution of ages of the sample, age ranges are presented as written results and are included in table 12.16. However, inferential testing was done on the mean age of the sample and the population and only written findings are given.

Table12.16

Fathers' demographic and other characteristics with number of fathers (%) in each category

Demographic characteristics	Category	Number of fathers (%)
Age range	15 - 19.75	1 (4)
	20 - 24.75	1 (4)
	25 - 29.75	7 (28)
	30 - 34.75	6 (24)
	35 - 39.75	10 (40)
Marital status	single	1 (4)
	married	17 (68)
	other	7 (28)
Age leaving school (1 missing value)	15 years	2 (8)
	16 years	10 (40)
	17 years	6 (24)
	18 years	6 (24)
Post-school education	none	10 (40)
	one type	10 (40)
	two or more types	5 (20)
Employment status	not applicable	1 (4)
	unemployed	1 (4)
	employed	23 (92)
Time of data generation in hours after baby's admission to NNU (days)	Between 25 and 48 hours (day 2)	3 (12)
	Between 49 and 72 hours (day 3)	9 (36)
	Between 73 and 96 hours (day 4)	7 (28)
	Between 97 and 120 hours (day 5)	5 (20)

The age of the participating fathers ranged from 16 - 40 years with a mean of 31.7 years (SD 5.9 years). The modal age range was 35 - 39.75 years, with 10 (40%) fathers in that age range (see table 12.16). In the population data, 417 (70%) fathers'

records included age. The population range was 16 – 55 years with a mean of 31.7 years. The age range of the sample is narrower than the population, but the mean age for the sample and the population match.

Of the 25 fathers, the majority were married, 17 (68%), one (4%) was single, and the remaining seven (28%) reported their status as other (see table 12.16). Only the mother's marital status is recorded for the population, as indicated in section 12.1.1, therefore only the status of married could be compared. The proportion of married fathers (68%) in the sample is similar to the proportion of 67% in the population.

One father was still attending school but planned to leave when he became 18 years old. Of the remaining 24 fathers, the majority, 10 (40 %), left school aged 16 years, with only two (8 %) leaving between 15 and 16 years, six (24%) leaving aged 17 years and six (24%) leaving aged 18 years. Therefore the majority of parents participating in the 'study' left school aged 16 years (see table 12.16).

There were 10 (40 %) fathers who had experienced one form of post-school education while five (20 %) had experienced a combination of two or three forms of post school education. There were 10 (40%) fathers who had engaged in no post-school education, including one father who was still attending high school (see table 12.16). There were no population data available for comparison, but there is a spread of educational experience across the participating fathers similar to the participating mothers.

For the one (4%) father who was still attending school this question on employment was not applicable. Of the 24 remaining fathers, 23 (92%) were employed and one (4%) was unemployed (see table 12.16). In the population data only 398 (67%) fathers' records included an employment status. There were 93% fathers employed and 7% unemployed. While there are similar proportions of fathers employed in the sample and in the population, the population data were from only 67% of the total population. Therefore the similarities are interpreted with caution.

Fathers participated across a variety of time slots. The range of time slots was from two to five days, i.e. three days, with a mean of two and one half days, a median of three and one half days, and a mode of three days (see table 12.16).

12.3.2 Preparedness for NNU care

Of the 25 fathers, 18 (72%) had no previous experience of NNU. There were seven (28%) who had either had a previous baby or babies in NNU or had close family or friends whose babies had been cared for in NNU (see table 12.17).

Table 12.17

Number (%) of fathers with previous experience of NNU or not and fathers who had prenatal information or not

	Number (%) of fathers given prenatal information	Number (%) of fathers not given prenatal information	Total (%)
Number (%) of fathers with previous experience	4 (16)	3 (12)	7 (28)
Number (%) of fathers with no previous experience	5 (20)	13 (52)	18 (72)
Total (%)	9 (36)	16 (64)	25

(χ^2 = 1.89 df = 1; ns)

When asked whether there had been any information given during the pregnancy about NNU care, for 16 (64%) fathers there had been no such intervention. Information had been given to nine (36%) fathers (see table 12.17).

Therefore 13 (52%) fathers had neither previous experience of NNU nor had been given information about NNU care and were therefore unprepared for their baby's admission to NNU (see table 12.17).

There were 12 (48%) fathers who considered themselves to be prepared. Of these prepared fathers, one third (4), had both types of preparation, previous experience and prenatal information, one quarter, (3), had only previous experience and five

had only been given prenatal information. These differences did not reach statistical significance ($\chi^2 = 1.89$ df = 1; ns) (see table 12.17).

To understand more of the preparedness of the fathers, whether the father was prepared or unprepared, or prepared in different ways, this variable was compared to other variables. The following four sub-sections present the findings in relation to preparedness and demographic characteristics, time of participation, expectation of, and warning of the baby's admission.

12.3.2.1 Preparedness and demographic characteristics

Comparison of the characteristics of the prepared and unprepared fathers was undertaken. The one father from Fife was prepared. The fathers' characteristics were also classified according to the type of preparation they had received, i.e. prenatal information and/or previous experience of NNU (see table 12.18). Because the number of fathers in some classifications was small, percentage calculations were not undertaken but, because the number of prepared (12) and unprepared (13) fathers was so similar, numbers could be compared.

The majority of fathers in the prepared and unprepared groups, and those prepared in different ways were married, had left school aged 16 years or more, were employed, had no or one type of post-school education (see table 12.18).

Most prepared and unprepared fathers, and fathers prepared in different ways, were in the three higher age ranges. There were exactly the same numbers of fathers prepared in different ways in each of the three higher age ranges. The two fathers aged between 15 and 24.75 years were unprepared (see table 12.18). There was no significant difference between the mean age of the prepared fathers, 31.98 years (SD 7.14), and the unprepared fathers, 31.5 years (SD 4.8)(t = 0.2 df = 23; ns). There was no significant difference between the mean age of fathers who had been given prenatal information or not 31.5 years (SD 4.8)(t = 0.2 df = 23; ns). There was no

significant difference between the mean age of fathers with previous experience or not 31.5 years (SD 4.8)($t = 0.2$ $df = 23$; ns).

Table 12.18

Fathers' demographic characteristics with number of prepared and unprepared fathers and type of preparation

Demographic characteristic	Category	Number of fathers			
		Unprepared	Prepared	Type of preparation	
				I	E
Age range	15 – 19.75	0	1	1	0
	20 – 24.75	0	1	1	0
	25 – 29.75	6	1	1	1
	30 – 34.75	3	3	2	2
	35 – 40	4	6	4	4
Marital status	single	0	1	1	0
	married	8	9	6	6
	other	5	2	2	1
Age leaving school (1 missing value)	15 years	1	1	1	1
	16 years	6	4	2	3
	17 years	4	2	2	1
	18 years	2	4	3	2
Post-school education	none	5	5	3	4
	one type	4	6	5	3
	two or more types	4	1	1	0
Employment status (1 missing value)	unemployed	0	1	1	0
	employed	13	10	7	7

I = prenatal information
E = previous experience of NNU

In the category of marital status, there were no significant differences between the proportions of prepared and unprepared fathers ($\chi^2 = 2.31$ $df = 2$; ns), fathers given prenatal information or not ($\chi^2 = 1.95$ $df = 2$; ns), or fathers with previous experience or not ($\chi^2 = 1.49$ $df = 2$; ns) (see table 12.18).

In the category of age leaving school, there were no significant differences between the proportions of prepared and unprepared fathers ($\chi^2 = 1.58$ $df = 3$; ns), fathers

given prenatal information or not ($\chi^2 = 1.8$ df = 3; ns), or fathers with previous experience or not ($\chi^2 = 0.93$ df = 3; ns) (see table 12.18).

In the category of post-school education status, there were no significant differences between the proportions of prepared and unprepared fathers ($\chi^2 = 5.97$ df = 8; ns), fathers given prenatal information or not ($\chi^2 = 5.04$ df = 8; ns), or fathers with previous experience or not ($\chi^2 = 8.14$ df = 8; ns) (see table 12.18).

In the category of employment status, there were no significant differences between the proportions of prepared and unprepared fathers ($\chi^2 = 5097$ df = 5; ns), fathers given prenatal information or not ($\chi^2 = 5.74$ df = 5; ns), or between fathers with previous experience or not ($\chi^2 = 7.41$ df = 5; ns) (see table 12.18).

12.3.2.2 Preparedness and time of participation

There were 10 fathers who participated at the same time as their partners. The other 15 fathers participated when their partner gave them the data generation tool package (see section 10.2.1) and returned the completed tools by mail. It is unknown exactly when these fathers completed the data generation tools. However, for the purposes of comparison, it has been assumed that the fathers participated on the same day as given the tools by his partner.

Table 12.19 indicates numbers of prepared and unprepared fathers, and fathers prepared in different ways, in each time slot; those who participated with their partner, and those who were assumed to have participated on the same day as given the tools by his partner.

Fathers with only one type of preparation did not participate between 25 – 48 hours or between 97 – 120 hours. No father with only previous experience of NNU participated between 73 and 96 hours. Prepared and unprepared fathers participated in all other time slots. The modal time for prepared fathers to participate was between 49 and 72 hours, although most of them participated by mail. The modal

time for unprepared fathers to participate was between 73 and 96 hours and most of them were directly recruited. Small numbers of prepared and unprepared fathers participated in the 25 – 48 hour and the 97 – 120 hour time slots (see table 12.19).

Table 12.19

Number (number of fathers if it is assumed they completed the data generation tools on the day they were given them by their partners) of prepared and unprepared fathers, and those fathers prepared in different ways, in each time frame after the baby's admission when data were generated

	Prepared fathers				*Unprepared fathers*
Time of data generation in hours after baby's admission to NNU	*Number who had been given only prenatal information about NNU*	*Number who had only previous experience of NNU*	*Number who had been given prenatal information and who had previous experience of NNU*	*Totals*	*Number who were unprepared*
Between 25 and 48 hours	*0*	*0*	*(1)*	*(1)*	*(2)*
Between 49 and 72 hours	*2 (2)*	*1 (2)*	*(1)*	*3 (5)*	*(1)*
Between 73 and 96 hours	*(1)*	*0*	*(1)*	*(2)*	*5(1)*
Between 97 and 120 hours	*0*	*0*	*(1)*	*(1)*	*2(2)*
Totals	*2 (3)*	*1 (2)*	*(4)*	*3 (9)*	*7 (6)*
	10 (15)				

The pattern of participation of prepared and unprepared fathers, and fathers prepared in different ways, was similar and did not appear to indicate any bias, allowing comparisons to be made.

12.3.2.3 Preparedness and expectation of baby's admission

Of the nine (36%) fathers who expected their baby to be admitted to NNU, five had previous experience of NNU. Of the 16 (64%) fathers who had not expected their baby to be admitted, only two had previous experience. Therefore the majority of fathers, 14, had not expected their baby to be admitted and had no previous experience of NNU. These findings were significant ($\chi^2 = 5.30$ df =1; p = <0.05) (see table 12.20).

Table 12.20

Number of fathers who had expected baby's admission or not with those who had previous experience of NNU or not

	Number (%) of fathers with previous experience	Number (%) of fathers with no previous experience	Total
Number (%) of fathers who expected baby's admission	5 (20)	4 (16)	9 (36)
Number (%) of fathers who did not expect baby's admission	2 (8)	14 (56)	16 (64)
Total (%)	7 (28)	18 (72)	25

($\chi^2 = 5.30$ df = 1; p = <0.05)

Table 12.21

Number (%) of fathers who had expected baby's admission or not with those who had been given prenatal information or not

	Number (%) of fathers given prenatal information	Number (%) of fathers not given prenatal information	Total (%)
Number (%) of fathers who expected baby's admission	7 (28)	2 (8)	9 (36)
Number (%) of fathers who did not expect baby's admission	2 (8)	14 (56)	16 (64)
Total (%)	9 (36)	16 (64)	25

($\chi^2 = 10.65$ df = 1; p = 0.001)

Of the nine (36%) fathers who expected their baby to be admitted to NNU, almost all of them, seven, had been given prenatal information about NNU. Of the 16 (64%) fathers who had not expected their baby to be admitted, only two had been given prenatal information about NNU. Therefore the majority, 14 fathers, had not expected their baby to be admitted, and had been given no prenatal information about NNU. These differences were highly significant ($\chi^2 = 10.65$ df = 1; p = 0.001) (see table 12.21).

All of the nine (36%) fathers who had expected the admission were prepared (see table 12.22). There were 16 (64%) fathers who had not expected the admission, with the majority, 13 fathers, unprepared. Therefore the majority of admissions to NNU were unexpected and the majority of fathers were unprepared. These differences were highly significant ($\chi^2 = 15.23$ df = 1; p = <0.001) (see table 12.22).

Table 12.22

Number (%) of fathers who expected baby's admission or not and whether they were prepared or not

	Number (%) of fathers who were prepared	Number (%) of fathers who were unprepared	Total (%)
Number of fathers (%) who expected baby's admission	9 (36)	0	9 (36)
Number of fathers (%) who did not expect baby's admission	3 (12)	13 (52)	16 (64)
Total (%)	12 (48)	13 (52)	25

($\chi^2 = 15.23$ df = 1; p = <0.001)

12.3.2.4 Preparedness and warning of baby's admission

While nine (36%) fathers expected their baby to be admitted, when all fathers were asked how much warning of their baby's admission they received, 15 (60%) fathers replied. The length of warning ranged from minutes to hours, to days to weeks, with

most fathers having only minutes or hours of warning. These data were not subjected to inferential testing due to the small numbers in each category.

Descriptively, one third of the fathers, 5, had previous experience of NNU, but two thirds, 10 fathers, had no previous experience (see table 12.23).

Table 12.23

Number of fathers who had a specified length of warning of their baby's admission to NNU and whether they had previous experience of NNU or not

Length of warning	Number of fathers who had previous experience of NNU	Number of fathers who had no previous experience of NNU	Total
minutes	2	3	5
hours	0	4	4
days	0	2	2
weeks	3	1	4
Total	5	10	15

Table 12.24

Number of fathers who had a specified length of warning of their baby's admission to NNU and whether they were given prenatal information or not

Length of warning	Number of fathers who were given prenatal information	Number of fathers who were not given prenatal information	Total
minutes	1	4	5
hours	2	2	4
days	1	1	2
weeks	3	1	4
Total	7	8	15

Of the 15 (60%) fathers who had warning of their baby's admission, prenatal information had been given to approximately half of them, 7 fathers (see table 12.24).

Table 12.25

Number of fathers who had a specified length of warning of their baby's admission to NNU and whether they were prepared or not

Length of warning	Number of fathers who were prepared	Number of fathers who were not prepared	Total
minutes	2	3	5
hours	2	2	4
days	1	1	2
weeks	4	0	4
Total	9	6	15

There were three fifths, nine fathers, of the 15 (60%) fathers who had warning of their baby's admission, who were prepared either through previous experience and/or prenatal information. However the remaining two fifths, six fathers, were unprepared for their baby's admission, despite having warning of it (see table 12.25).

12.3.3 Sources and content of prenatal information given to fathers

In section 12.3.2, it was reported that of the sample of 25 fathers, 16 (64%) were given prenatal information about NNU care. However, when all fathers were asked to identify the source/s of prenatal information, only nine (36%) fathers responded. Of the nine fathers, three were given information by a midwife, and a tour of NNU was experienced by only two fathers. A neonatologist was a source of information for one father, who also had information from a midwife and his family. One father acknowledged no professional sources for his information, gleaning it from media sources.

The content of the information fathers reported was similar to the information given to mothers (see section 12.1.3).

12.4 Babies

The participating parents consented to retrieval of demographic from their baby's records. The babies were otherwise uninvolved in the 'study', but were considered and are referred to as the sample of babies. In this section the findings from the analysis of the babies' data are presented.

One couple agreed to participate and conversed with the 'researcher' about their experiences, indicating they were unprepared for their baby's admission, but they did not complete the parent's questionnaire or the STAI. Because data were retrieved from the baby's records, they were analysed. The unprepared status of these parents was included in the comparisons made between babies and parents, therefore in parts of this section only, the number in the mother's sample is 65 and in the father's sample, 26.

Babies are admitted to a NNU as a first admission from the labour ward, post natal ward or another hospital. They may then be transferred to the postnatal ward or to another hospital and subsequently be readmitted to the NNU at a later date. The sample babies were first admissions to the NNU.

During the recruitment of parents, 581 babies had a first admission to the NNU. Of these, the parents of 73 (13%) babies were involved in the 'study', thus 73 babies comprised the sample. The majority of the babies, 69 (95%), were admitted on the day of their birth. There were four (5%) babies admitted two days after their birth. The total number of admissions to the NNU during the data collection period was 595 babies, therefore there were 14 re-admissions. Of the total population, the sample of 73 babies represented 12%. To assess similarities between the sample and the population, comparisons were made on the population data that were available. However data were only available for 479 (81%) babies, and included first admissions and re-admissions.

12.4.1 Demographic characteristics

The sample consisted of 40 (55%) boys and 33 (45%) girls (see table 12.26). In the population of 479 (81%), there were 270 (56%) boys and 209 (44%) girls, therefore there were similar gender percentages in the sample and population.

There were 50 (68%) preterm babies and 23 (32%) term babies (see table 12.26) in the sample. In the population there were 275 (57%) preterm babies and 204 (43%) term babies. Therefore the sample was comprised of proportionately more preterm babies. This finding was confirmed when the data on range, mean and median related to gestational age were analysed.

Table 12.26

Babies' demographic characteristics with number (%) of babies in each category

Demographic characteristic	Category	Number (%) of babies
Gender	boy	40 (55)
	girl	33 (45)
Gestation	preterm	50 (68)
	term	23 (32)
Birth weight	0 - 0.99 kg	11 (15)
	1.0 - 1.49 kg	11 (15)
	1.5 - 2.49 kg	19 (26)
	2.5 - 5.0 kg	32 (44)
Route of birth	spontaneous vaginal	34 (47)
	complicated vaginal	3 (4)
	instrumental vaginal	7 (10)
	caesarean section	29 (40)

The range of gestation at birth of the sample was 24 - 41 weeks gestation (range 17 weeks). The range of gestation of the population was slightly wider at 22 - 42 weeks gestation (range 20 weeks). The mean and median gestations at birth of the sample were both 34 weeks (SD 5.14), indicating a symmetric distribution. The mean and median gestations at birth of the population were 35.6 and 36.5 weeks respectively, indicating a slightly negative skew, i.e. there were more babies of slightly older

gestations at birth in the population than in the sample. However, there was no significant difference between the mean gestational age in the population and the sample ($t = 0.068$ $df = 72$; ns). The standard deviation for the gestation of the population was not available.

The range of birth weights of the sample was 0.42 - 4.25 kilograms (kg) (range 3.83kg), with a mean of 2.3kg and a median of 2.1kg. The modal weight range was 2.5 - 5.0 kg, with 32 (44%) babies in this category (see table 12.26). With a gestational range of 24 – 41 weeks, the weight range represents an appropriate distribution (Gairdner and Pearson 1971). No population data on birth weight were available for comparison.

The route of birth for the sample babies varied. Of the 44 (60%) babies born vaginally, 34 (47%) were spontaneous vaginal births, three (4%) were complicated vaginal births, and seven (10) required the assistance of forceps or vacuum extraction. The remaining 29 (40%) babies were born by caesarean section (see table 12.26). No population data on birth route were available for comparison. However as most births are via the spontaneous vaginal route, the finding that the largest proportion of sample babies, 47% (34 babies), were born via this route was expected (Johnston 1998). Birth by caesarean section is associated with many complications for the baby that are more likely to require the baby's admission to NNU (Korones 1986). Therefore the number and proportion of babies in the sample born by this route was expected.

Of the sample babies, 16 (22%) were twins, i.e. eight sets of twins, while in the population the percentage of twins was 11%, representing 57 babies from 32 sets of twins. In the population, five babies were from two sets of triplets and three babies were from one set of quadruplets. Mothers who gave birth to triplets and higher multiples were excluded due to the severity of illness of the babies (see section 8.3.1). There were four prepared and four unprepared mothers of twins in the sample of mothers. All the prepared mothers had been given prenatal information, but one also had previous experience. Therefore there was equal representation of prepared

and unprepared mothers of twins in the sample of mothers, although the type of preparation differed as only one mother had previous experience.

There was one prepared and one unprepared father of twins in the sample of fathers. The prepared father had been given prenatal information.

There was a range of initial diagnoses for the sample babies that was similar to those recognized as common problems requiring admission to NNU (Korones 1986). This factor and the similarities between the sample babies and the population, suggest the sample was varied yet typical of the babies usually admitted to NNU.

Babies in NNU can require one of three categories of care (BAPM and NNA 1992) (see Appendix 1). Each category indicates the baby's level of clinical dependence. Level 1 intensive care indicates high clinical dependence while special care indicates less clinical dependence. Analysis was undertaken to determine the categories of care required by the sample babies over the first five days after admission. There were 35 (48%) babies who required level 1 intensive care, 27 (37%) babies who required level 2 intensive care and 11 (15%) babies who required special care on their day of admission (see table 12.27), showing a range of clinical dependence.

In the population, 218 (37%) babies required level 1 intensive care on their admission/readmission day, 37 (6%) babies required level 2 intensive care and 340 (57%) babies required special care. When the proportions of babies in each category of care were compared, it was evident that while there was a range of clinical dependence in the population, the sample babies were more clinically dependent on the day of admission, than the population. These babies were very ill, usually with severe respiratory and/or circulatory problems, and/or infection, and/or congenital abnormalities, but their condition had not deteriorated over the preceding 12 hours nor were they dying, i.e. they fulfilled the inclusion criteria (see section 8.3.1). The range of clinical dependence found in the sample on the day of admission was relevant to the 'study' (see table 12.27).

Table 12.27

Number (%) of babies in each classification of care on days 1 – 5 of admission, contrasted with the population on the day of admission

	Number (%) of sample babies in each classification of care on days 1 – 5 of admission, and of population babies on day of admission					
Days	1		2	3	4	5
Classification of Care	Sample	*Population*				
Level 1	35 (48)	*218 (37)*	30 (41)	24 (33)	16 (22)	13 (18)
Level 2	27 (37)	*37 (6)*	18 (25)	15 (21)	12 (16)	13 (18)
Special Care	11 (15)	*340 (57)*	24 (33)	29 (40)	22 (30)	18 (25)
Transferred to post natal ward			1 (1)	3 (4)	9 (12)	11 (15)
Transferred home						3 (4)
Missing data				2 (3)	14 (19)	15 (21)
Total	73	*595*	73	73	73	73

Over the subsequent four days, the condition of some babies improved as they became less dependent and moved through the categories of care (see table 12.27). Difficulties accessing records once babies were transferred or discharged resulted in missing data for this time period. By the fifth day, the number of sample babies requiring level 1 intensive care was 13 (18%), requiring level 2 intensive care was 13 (18%) and requiring special care was 18 (25%). There were 11 (15%) babies who had been transferred to the postnatal wards and three (4%) babies had been discharged home. There were 15 missing values, but it appears that by their fifth day, the sample babies' level of dependency had fallen, with 18 (25%) requiring special care. However 13 (18%) babies still required level 1 intensive care, indicating their continued high level of dependence.

12.4.2 Babies' characteristics and parents' preparedness

Preterm babies, those of low birth weight (LBW), boys, and babies not born via a spontaneous vaginal route are more likely to have problems requiring admission to NNU than term babies, those whose birth weight is above 2.5 kg, girls, and those born by a spontaneous vaginal route (Bain 1999). To determine if the preparedness of parents varied with any of these variables, comparisons were made. These findings are reported in this sub-section.

The findings pertinent to the mothers will be reported first, followed by those pertinent to the fathers. In each of these parts, the findings will be reported in six divisions related to gender, gestation, birth weight, route of birth, classification of care on day 1, and whether the baby had been held prior to the parents' participation. Two main tables in each part summarize the findings (tables 12.28 and 12.41), however if significant findings were determined, further tables complement the discussion.

12.4.2.1 Mothers

The characteristics of the babies were compared with the preparedness of their mothers and these findings follow, with a summary in table 12.28. It should be noted that there were 8 sets of twins in the sample of babies, therefore the total number of mothers referred to is 73.

12.4.2.1.1 Gender

Of the 40 boys born to participating mothers, 17 had prepared mothers. There were 12 who were given prenatal information and 28 who were not. There were 11 who had previous experience and 29 who did not. Of the 33 girls born to participating mothers, 16 had prepared mothers. There were 11 who had been given information and 22 who had not. There were nine who had previous experience and 24 who had not (see table 12.28). There were no significant differences between mothers who received information and the gender of their baby ($\chi^2 = 0.93$ df = 1; ns), or between

mothers who had previous experience and the gender of their baby ($\chi^2 = 0$ df = 1; ns). Neither was there any significant differences between prepared and unprepared mothers and the gender of their baby ($\chi^2 = 0.26$ df = 1; ns).

Table 12.28

Babies' characteristics with number of babies in each category, number of prepared and unprepared mothers, and number of mothers with each type of preparation

Demographic characteristic	Category	Number of babies	Numbers of mothers and their preparedness					
			Info		Exp		P	Up
			Y	N	Y	N		
Gender	boy	40	12	28	10	30	17	23
	girl	33	11	22	6	27	16	17
Gestation	preterm	50	23	27	12	38	27	23
	term	23	3	20	4	19	6	17
Birth weight	0 - 0.99 kg	11	9	2	3	8	9	2
	1.0 - 1.49 kg	11	6	5	2	9	7	4
	1.5 - 2.49 kg	19	6	13	5	14	8	11
	2.5 - 5.0 kg	32	5	27	6	26	9	23
Route of birth	spontaneous vaginal	34	11	23	5	29	15	19
	complicated vaginal	3	1	2	1	2	2	1
	instrumental vaginal	7	2	5	1	6	2	5
	caesarean section	29	12	17	9	20	14	15
Classification of care on day 1	Level 1 intensive care	35	16	19	12	23	22	13
	Level 2 intensive care	27	4	23	5	22	6	21
	Special care	11	3	8	3	8	5	6

Info = given prenatal information
Exp = had previous experience of NNU
P = prepared
Up = unprepared
Y = yes
N = no

12.4.2.1.2 Gestation

There were 50 babies born preterm and 27 had prepared mothers (see table 12.28). There were 23 mothers who had been given prenatal information and 27 who had not (see table 12.29). There were 12 mothers who had previous experience and 38 who had not (see table 12.30). Of the 23 babies born at term, six had prepared mothers. There were three mothers who had been given prenatal information and 20 who had not (see table 12.29). There were four mothers who had previous experience of NNU and 19 who had not (see table 12.30).

There was a significant difference in the proportions of preterm and term babies and whether their mother had been given prenatal information or not ($\chi^2 = 7.46$ df = 1; p = <0.01) (see table 12.29).

Table 12.29

Numbers (%) of mothers, of babies in two gestation categories, and whether they had been given prenatal information or not

Baby's gestation category	Number (%) of mothers given prenatal information	Number (%) of mothers not given prenatal information	Total (%)
Preterm	23 (32)	27 (37)	50 (69)
Term	3 (4)	20 (27)	23 (31)
Total (%)	26 (36)	47 (64)	73

($\chi^2 = 7.46$ df = 1; p = <0.01)

Table 12.30

Numbers (%) of mothers, of babies in two gestation categories, and whether they had previous experience of NNU or not

Baby's gestation category	Number (%) of mothers with previous experience	Number (%) of mothers with no previous experience	Total (%)
Preterm	12 (16)	38 (52)	50 (68)
Term	4 (6)	19 (26)	23 (32)
Total (%)	16 (22)	57 (78)	73

($\chi^2 = 0.4$ df = 1; ns)

There were no significant differences between the numbers of preterm and term babies and whether their mother had previous experience or not ($\chi^2 = 0.4$ df = 1; ns) (see table 12.30).

The overall preparedness of the mothers was compared with whether the baby was preterm or term. The largest number of prepared mothers had preterm babies (27). Large numbers of mothers of preterm (23) and term babies (17) were unprepared. A very small number of mothers of term babies (6) was prepared. These differences in proportions were significant ($\chi^2 = 4.96$ df = 1; p = <0.05) (see table 12.31). It is likely that there was an strong influence on these significant findings related to the significant differences between mothers in relation to whether the mother was given information or not.

Table 12.31

Numbers (%) of mothers, of babies in two gestation categories, and whether they were prepared or not

Baby's gestation category	Number (%) of prepared mothers	Number (%) of unprepared mothers	Total (%)
Preterm	27 (37)	23 (32)	50 (69)
Term	6 (8)	17 (23)	23 (31)
Total (%)	33 (45)	40 (55)	73

($\chi^2 = 4.96$ df = 1; p = <0.05)

12.4.2.1.3 Birth Weight

There were variations in the numbers of babies in each birth weight category and whether the mothers had received prenatal information (see tables 12.28 and 12.32). The first weight category was 0-0.99 kg and there were nine mothers of babies in this category who were given information and two who were not. The second weight category was 1-1.49 kg and there were six mothers of babies in this category who were given information and five who were not. The third weight category was

1.5-2.49 kg and there were six mothers of babies in this category who were given information and 13 who were not. The fourth weight category was 2.5-5 kg and there were five mothers of babies in this category who were given information and 27 who were not, the highest proportion. These differences in proportions were highly significant ($\chi^2 = 17.67$ df = 3; p = 0.001)(see table 12.32).

Table 12.32

Numbers (%) of mother, of babies in four birth weight categories, who were given prenatal information or not

Baby's birth weight category	Number (%) of mothers given prenatal information	Number (%) of mothers not given prenatal information	Total (%)
0 - 0.99 kg	9 (12)	2 (3)	11 (15)
1.0 - 1.49 kg	6 (8)	5 (7)	11 (15)
1.5 - 2.49 kg	6 (8)	13 (18)	19 (26)
2.5 - 5.0 kg	5 (7)	27 (37)	32 (44)
Total (%)	26 (35)	47 (65)	73

($\chi^2 = 17.67$ df = 3; p = 0.001)

There were variations in the numbers of babies in each weight category and whether the mothers had previous experience (see tables 12.28 and 12.33).

Table 12.33

Numbers (%) of mother, of babies in four birth weight categories, who had previous experience or not

Baby's birth weight category	Number (%) of mothers with previous experience	Number (%) of mothers with no previous experience	Total (%)
0 - 0.99 kg	3 (4)	8 (11)	11 (15)
1.0 - 1.49 kg	2 (3)	9 (12)	11 (15)
1.5 - 2.49 kg	5 (7)	14 (19)	19 (26)
2.5 - 5.0 kg	6 (8)	26 (36)	32 (44)
Total (%)	16 (22)	57 (78)	73

($\chi^2 = 0.68$ df = 3; ns)

The first weight category was 0-0.99 kg and there were three mothers of babies in this category who had previous experience and eight who had not. The second

weight category was 1-1.49 kg and there were two mothers of babies in this category who had previous experience and nine who had not. The third weight category was 1.5-2.49 kg and there were five mothers of babies in this category who had previous experience and 14 who had not. The fourth weight category was 2.5-5 kg and there were six mothers of babies in this category who had previous experience and 26 who had not, the highest proportion. These differences in proportions were not significant ($\chi^2 = 0.68$ df = 3; ns)(see table 12.33).

The overall preparedness of the mothers was compared with the baby's birth weight category. The largest number of mothers were unprepared and had babies in the 2.5 – 5 kg category (23). Similar numbers of prepared mothers had babies in each of the four birth weight categories (7 – 9). The smallest number of unprepared mothers had babies of 0-0.99 kg (2). The differences in proportions were significant ($\chi^2 = 11.3$ df = 3; p = 0.01) (see table 12.34). It is likely that there was a strong influence on these significant findings related to the significant differences between mothers in relation to whether the mother was given information or not.

Table 12.34

Numbers (%) of mothers, of babies in four birth weight categories, and whether they were prepared or not

Baby's gestation category	Number (%) of prepared mothers	Number (%) of unprepared mothers	Total (%)
0 - 0.99 kg	9 (12)	2 (3)	11 (15)
1.0 - 1.49 kg	7 (10)	4 (5)	11 (15)
1.5 - 2.49 kg	8 (11)	11 (15)	19 (26)
2.5 - 5.0 kg	9 (12)	23 (32)	32 (44)
Total (%)	33 (45)	40 (55)	73

($\chi^2 = 11.3$ df = 3; p = 0.01)

12.4.2.1.4 Route of birth

There were 11 babies born spontaneously vaginally, one born by a complicated vaginal route, two born using instruments and 12 born by caesarean section who had mothers who were given information. There were 23 babies born spontaneously vaginally, two born by a complicated vaginal route, five born using instruments and 17 born by caesarean section who had mothers who were not given information (see table 12.28).

There were five babies born spontaneously vaginally, one born by a complicated vaginal route, one born using instruments and nine born by caesarean section who had mothers who had previous experience. There were 29 babies born spontaneously vaginally, two born by a complicated vaginal route, six born using instruments and 20 born by caesarean section who had mothers with no previous experience (see table 12.28).

There were no significant differences between the proportions of mothers who received information and the route of birth ($\chi^2 = 0.74$ df = 3; ns), or between mothers who had previous experience and the route of birth ($\chi^2 = 2.91$ df = 3; ns). Neither was there any significant difference between prepared and unprepared mothers and the route of birth ($\chi^2 = 1.47$ df = 3; ns).

12.4.2.1.5 Classification of care on day 1

Of the 23 babies whose mothers had been given prenatal information, 16 required level 1 intensive care, four required level 2 intensive care and three required special care on the day of admission. Of the 50 babies whose mothers had no prenatal information, 19 required level 1 intensive care, 23 required level 2 intensive care and eight required special care on the day of admission. These differences were statistically significant ($\chi^2 = 6.85$ df = 2; p = <0.05) (see table 12.35).

Table 12.35

Numbers (%) of babies in each classification of care on day 1, and whether their mother had been given prenatal information or not

Classification of care on day 1	Number (%) of babies with mothers given prenatal information	Number (%) of babies with mothers not given prenatal information	Total (%)
Level 1 intensive care	16 (22)	19 (26)	35 (48)
Level 2 intensive care	4 (5)	23 (32)	27 (37)
Special care	3 (4)	8 (11)	11 (15)
Total (%)	23 (31)	50 (69)	73

(χ^2 = 6.85 df = 2; p = <0.05)

Of the 20 babies with mothers who had previous experience, 12 required level 1 intensive care, five required level 2 intensive care, and three required special care on the day of admission. Of the 53 babies with mothers who had no previous experience, 23 required level 1 intensive care, 22 required level 2 intensive care and eight required special care on the day of admission. These differences were not statistically significant (χ^2 = 1.90 df = 2; ns) (see table 12.36).

Table 12.36

Numbers (%) of babies in each classification of care on day 1, and whether their mother had previous experience or not

Classification of care on day 1	Number (%) of babies with mothers with previous experience	Number (%) of babies with mothers with no previous experience	Total (%)
Level 1 intensive care	12 (16)	23 (32)	35 (48)
Level 2 intensive care	5 (7)	22 (30)	27 (37)
Special care	3 (4)	8 (11)	11 (15)
Total (%)	20 (27)	53 (73)	73

(χ^2 = 1.90 df = 2; ns)

Of the 33 babies with prepared mothers, 22 required level 1 intensive care, six required level 2 intensive care and five required special care on the day of admission. Of the 40 babies with unprepared mothers, 13 required level 1 intensive care, 21 required level 2 intensive care and six required special care on the day of admission. These differences were statistically significant ($\chi^2 = 10.16$ df = 2; p = <0.01) (see table 12.37).

Table 12.37

Numbers (%) of babies in each classification of care on day 1, and whether their mother was prepared or not

Classification of care on day 1	Number (%) of babies with prepared mothers	Number (%) of babies with unprepared mothers	Total (%)
Level 1 intensive care	22 (30)	13 (18)	35 (48)
Level 2 intensive care	6 (8)	21 (29)	27 (37)
Special care	5 (7)	6 (8)	11 (15)
Total (%)	33 (45)	40 (55)	73

($\chi^2 = 10.16$ df = 2; p = <0.01)

12.4.2.1.6 Held baby prior to participation

Prior to participation in the 'study', approximately two thirds of the babies had been held by their mother. Of the 23 babies whose mothers had been given prenatal information, six had held their baby and 17 had not. Of the 50 babies whose mothers had not received prenatal information, 39 had held their baby and 11 had not (see table 12.38). These differences were highly significant ($\chi^2 = 17.96$ df = 1; p = <0.0001).

Table 12.38

Numbers (%) of babies who had been held prior to their mother's participation, and whether their mother had been given prenatal information or not

Held baby prior to participation	Number (%) of babies with mothers given prenatal information	Number (%) of babies with mothers not given prenatal information	Total (%)
Yes	6 (8)	39 (54)	45 (62)
No	17 (23)	11 (15)	28 (38)
Total (%)	23 (31)	50 (69)	73

(χ^2 = 17.96 df = 1; p = <0.0001)

Of the 20 babies whose mothers had previous experience, eight had been held prior to their mother's participation and 12 had not. Of the 53 babies whose mothers had no previous experience, 37 had been held prior to their mother's participation and 16 had not (see table 12.39). These differences were statistically significant ($\chi^2 = 5.46$ df = 1; p = <0.05).

Table 12.39

Numbers (%) of babies who had been held prior to their mother's participation, and whether their mother had previous experience or not

Held baby prior to participation	Number (%) of babies with mothers with previous experience	Number (%) of babies with mothers with no previous experience	Total (%)
Yes	8 (11)	37 (51)	45 (62)
No	12 (16)	16 (22)	28 (38)
Total (%)	20 (27)	53 (73)	73

(χ^2 = 5.46 df = 1; p = <0.05)

There were 33 babies who had prepared mothers, and 11 had been held prior to participation while 22 had not. Of the 40 unprepared fathers, 34 had held their baby, while six had not (see table 12.40). These differences were highly significant ($\chi^2 = 20.42$ df = 1; p = <0.0001).

Table 12.40

Numbers (%) of babies who had been held prior to their mother's participation, and whether their mother was prepared or not

Held baby prior to participation	Number (%) of babies with prepared mothers	Number (%) of babies with unprepared mothers	Total (%)
Yes	11 (15)	34 (47)	45 (62)
No	22 (30)	6 (8)	28 (38)
Total (%)	33 (45)	40 (55)	73

(χ^2 = 20.42 df = 1; p = <0.0001)

12.4.2.2 Fathers

The characteristics of the babies were compared with the preparedness of their fathers and these findings follow, with a summary in table 12.41. It should be noted that there were two sets of twins who had fathers who participated, therefore the total number of fathers referred to is 28.

12.4.2.2.1 Gender

Of the 18 boys born to participating fathers, nine had prepared fathers. There were seven who were given prenatal information and 11 who were not. There were five who had previous experience and 13 who did not. Of the10 girls born to participating fathers, four had prepared fathers. There were three who had been given information and seven who had not. There were two who had previous experience and eight who had not (see table 12.41). There were no significant differences between fathers who received information and the gender of their baby (χ^2 = 0.22 df = 1; ns), or between fathers who had previous experience and the gender of their baby (χ^2 = 0.21 df = 1; ns). Neither was there any significant difference between prepared and unprepared fathers and the gender of their baby (χ^2 = 0.26 df = 1; ns).

Table 12.41

Babies' characteristics with number of babies in each category, number of prepared and unprepared fathers, and number of fathers with each type of preparation

Demographic characteristic	Category	Number of babies	Numbers of fathers and their preparedness					
			Info		Exp		P	Up
			Y	N	Y	N		
Gender	boy	18	7	11	5	13	9	9
	girl	10	3	7	2	8	4	6
Gestation	preterm	18	8	10	6	12	11	7
	term	10	2	8	1	9	2	8
Birth weight	0 - 0.99 kg	4	3	1	2	2	3	1
	1.0 - 1.49 kg	5	3	2	0	5	3	2
	1.5 - 2.49 kg	7	1	6	3	4	4	3
	2.5 - 5.0 kg	12	3	9	2	10	3	9
Route of birth	spontaneous vaginal	11	6	5	0	11	6	5
	complicated vaginal	1	0	1	0	1	0	1
	instrumental vaginal	4	0	4	0	4	0	4
	caesarean section	12	4	8	7	5	7	5
Classification of care on day 1	Level 1 intensive care	35	9	5	3	11	9	5
	Level 2 intensive care	27	1	9	2	8	2	8
	Special care	11	0	4	2	2	2	2
Held baby prior to participation	Y	14	1	13	2	12	3	11
	N	14	9	5	5	9	10	4

Info = given prenatal information
Exp = had previous experience of NNU
P = prepared
Up = unprepared
Y = yes
N = no

12.4.2.2.2 Gestation

Of the 18 babies born preterm, 11 had prepared fathers (see table 12.41). There were eight fathers who had been given prenatal information and 10 who had not (see table 12.42). There were six who had previous experience and 12 who had not (see table 12.43). Of the 10 babies born at term, two had prepared fathers (see table 12.41). There were two fathers who had been given prenatal information and eight who had not (see table 12.42). There was one father who had previous experience of NNU and nine who had not (see table 12.43).

Table 12.42

Numbers (%) of fathers, of babies in two gestation categories, and whether they had been given prenatal information or not

Baby's gestation category	Number (%) of fathers given prenatal information	Number (%) of fathers not given prenatal information	Total (%)
Preterm	8 (29)	10 (36)	18 (64)
Term	2 (7)	8 (29)	10 (36)
Total (%)	10 (36)	18 (64)	28

(χ^2 = 1.67 df = 1; ns)

There were no significant differences in the proportions of preterm and term babies and whether their father had been given prenatal information or not (χ^2 = 1.67 df = 1; ns) (see table 12.42), or had experience of NNU or not (χ^2 = 1.87 df = 1; ns) (see table 12.43).

Table 12.43

Numbers (%) of fathers, of babies in two gestation categories, and whether they had previous experience of NNU or not

Baby's gestation category	*Number (%) of fathers with previous experience*	*Number (%) of fathers with no previous experience*	*Total (%)*
Preterm	*6 (21)*	*12 (43)*	*18 (64)*
Term	*1 (4)*	*9 (32)*	*10 (36)*
Total (%)	*7 (25)*	*21 (75)*	*28*

(χ^2 = 1.87 df = 1; ns)

The overall preparedness of the fathers was compared with whether the baby was preterm or term. The largest number of prepared fathers had preterm babies (11). There were seven fathers of preterm and eight fathers of term babies who were unprepared. Only two fathers of term babies were prepared. These differences were significant ($\chi^2 = 4.37$ df = 1; p = <0.05) (see table 12.44).

Table 12.44

Numbers (%) of fathers, of babies in two gestation categories, and whether they were prepared or not

Baby's gestation category	Number (%) of prepared fathers	Number (%) of unprepared fathers	Total (%)
Preterm	11 (39)	7 (25)	18 (64)
Term	2 (7)	8 (29)	10 (36)
Total (%)	13 (46)	15 (54)	28

($\chi^2 = 4.37$ df = 1; p = <0.05)

12.4.2.2.3 Birth Weight

There were variations in the numbers of babies in each weight category and whether the fathers had received prenatal information (see table 12.41). The first weight category was 0-0.99 kg and there were three fathers of babies in this category who were given information and one who was not. The second weight category was 1-1.49 kg and there were three fathers of babies in this category who were given information and two who were not. The third weight category was 1.5-2.49 kg and there was one fathers of a baby in this category who was given information and six who were not. The fourth weight category was 2.5-5 kg and there were three fathers of babies in this category who were given information and nine who were not (see table 12.41). There were no significant differences between fathers who received information and their baby's birth weight category ($\chi^2 = 5.97$ df = 3; ns).

There were variations in the numbers of babies in each weight category and whether the fathers had previous experience (see table 12.41). The first weight category was 0-0.99 kg and there were two fathers of babies in this category who had previous experience and two who had not. The second weight category was 1-1.49 kg and there were no fathers of babies in this category who had previous experience but five who had not. The third weight category was 1.5-2.49 kg and there were three fathers of babies in this category who had previous experience and four who had not. The fourth weight category was 2.5-5 kg and there were two fathers of babies in this category who had previous experience and 10 who had not (see table 12.41). There were no significant differences between fathers who had previous experience and their baby's birth weight category ($\chi^2 = 4.64$ df = 3; ns).

The overall preparedness of the fathers was compared with the baby's birth weight category. The largest number of fathers were unprepared and had babies in the 2.5 – 5 kg category (9). Similar numbers of prepared fathers had babies in each of the four birth weight categories (3 – 4). The smallest number of unprepared fathers had babies of 0-0.99 kg (1) (see table 12.41). There were no significant differences between prepared and unprepared fathers and their baby's birth weight category ($\chi^2 = 4.22$ df = 3; ns).

12.4.2.2.4 Route of birth

There were six babies born spontaneously vaginally and four born by caesarean section with fathers who were given information. There were five babies born spontaneously vaginally, one born by a complicated vaginal route, four born using instruments and eight born by caesarean section who had fathers who were not given information. These differences were not significant ($\chi^2 = 4.51$ df = 3; ns) (see table 12.45).

Table 12.45

Numbers (%) of fathers, of babies born via one of four routes of birth, and whether they had been given prenatal information or not

Baby's route of birth	Number (%) of fathers given prenatal information	Number (%) of fathers not given prenatal information	Total (%)
Spontaneous vaginal	6 (21)	5 (18)	11 (39)
Complicated vaginal	0	1 (4)	1 (4)
Instrumental vaginal	0	4 (14)	4 (14)
Caesarean section	4 (14)	8 (29)	12 (43)
Total (%)	10 (35)	18 (65)	28

(χ^2 = 4.51 df = 3; ns)

Table 12.46

Numbers (%) of fathers, of babies born via one of four routes of birth, and whether they had previous experience or not

Baby's route of birth	Number (%) of fathers with previous experience	Number (%) of fathers with no previous experience	Total (%)
Spontaneous vaginal	0	11 (39)	11 (39)
Complicated vaginal	0	1 (4)	1 (4)
Instrumental vaginal	0	4 (14)	4 (14)
Caesarean section	7 (25)	5 (18)	12 (43)
Total (%)	7 (25)	21 (75)	28

(χ^2 = 12.44 df = 3; p = <0.01)

The seven babies of fathers who had previous experience were all born by caesarean section. The largest number of fathers with no experience (11) had babies born spontaneously vaginally. Smaller numbers of fathers with no experience had babies born by a complicated vaginal route (1), using instruments (4) and by caesarean

section (5). These differences were significant (χ^2 = 12.44 df = 3; p = <0.01) (see table 12.46).

Of the eleven babies born spontaneously vaginally, six had prepared fathers and five had unprepared fathers. There was one unprepared father whose baby was born by a complicated vaginal route and four unprepared fathers whose baby was born using instruments. Of the 12 babies born by caesarean section, seven had prepared fathers and five had unprepared fathers. These differences were not significant (χ^2 = 5.31 df = 3; ns) (see table 12.47)

Table 12.47

Numbers (%) of fathers, of babies born via one of four routes of birth, and whether they were prepared or not

Baby's route of birth	Number (%) of prepared fathers	Number (%) of unprepared fathers	Total (%)
Spontaneous vaginal	6 (21)	5 (18)	11 (39)
Complicated vaginal	0	1 (4)	1 (4)
Instrumental vaginal	0	4 (14)	4 (14)
Caesarean section	7 (25)	5 (18)	12 (43)
Total (%)	13 (46)	15 (54)	28

(χ^2 = 5.31 df = 3; ns)

12.4.2.2.5 Classification of care on day 1

Of the 10 babies whose fathers had been given prenatal information, nine required level 1 intensive care and one required level 2 intensive care on the day of admission. Of the 18 babies whose fathers had no prenatal information, five required level 1 intensive care, nine required level 2 intensive care and four required special care on the day of admission. These differences were statistically significant (χ^2 = 10.08 df = 2; p = <0.01) (see table 12.48).

Table 12.48

Numbers (%) of babies in each classification of care on day 1, and whether their father had been given prenatal information or not

Classification of care on day 1	Number (%) of babies with fathers given prenatal information	Number (%) of babies with fathers not given prenatal information	Total (%)
Level 1 intensive care	9 (32)	5 (18)	14 (50)
Level 2 intensive care	1 (4)	9 (32)	10 (36)
Special care	0	4 (14)	4 (14)
Total (%)	10 (36)	18 (64)	28

(χ^2 = 10.08 df = 2; p = <0.01)

Of the seven babies with fathers who had previous experience, three required level 1 intensive care, two required level 2 intensive care, and two required special care on the day of admission. Of the 18 babies with fathers who had no previous experience, 11 required level 1 intensive care, eight required level 2 intensive care and two required special care on the day of admission. These differences were not statistically significant (χ^2 = 1.56 df = 2; ns) (see table 12.49).

Table 12.49

Numbers (%) of babies in each classification of care on day 1, and whether their father had previous experience or not

Classification of care on day 1	Number (%) of babies with fathers with previous experience	Number (%) of babies with fathers with no previous experience	Total (%)
Level 1 intensive care	3 (11)	11 (39)	14 (50)
Level 2 intensive care	2 (7)	8 (29)	10 (36)
Special care	2 (7)	2 (7)	4 (14)
Total (%)	7 (25)	21 (75)	28

(χ^2 = 1.56 df = 2; ns)

Of the 13 babies with prepared fathers, nine required level 1 intensive care, two required level 2 intensive care, and two required special care on the day of admission. Of the 15 babies with unprepared fathers, five required level 1 intensive care, eight required level 2 intensive care and two required special care on the day of admission. These differences were not statistically significant ($\chi^2 = 4.62$ df = 2; ns) (see table 12.50).

Table 12.50

Numbers (%) of babies in each classification of care on day 1, and whether their father was prepared or not

Classification of care on day 1	Number (%) of babies with prepared fathers	Number (%) of babies with unprepared fathers	Total (%)
Level 1 intensive care	9 (32)	5 (18)	14 (50)
Level 2 intensive care	2 (7)	8 (29)	10 (36)
Special care	2 (7)	2 (7)	4 (14)
Total (%)	13 (36)	15 (54)	28

($\chi^2 = 4.62$ df = 2; ns)

12.4.2.2.6 Held baby prior to participation

Prior to participation in the 'study', half of the babies had been held by their father. Of the 10 babies whose fathers had been given prenatal information, nine had been held by their father and one had not. Of the 18 babies whose fathers had not received prenatal information, 13 had been held by their father and five had not. These differences were significant ($\chi^2 = 9.97$ df = 1; p = <0.01) (see table 12.51).

Table 12.51

Numbers (%) of babies who had been held prior to their father's participation, and whether their father had been given prenatal information or not

Held baby prior to participation	Number (%) of babies with fathers given prenatal information	Number (%) of babies with fathers not given prenatal information	Total (%)
Yes	1 (4)	13 (46)	14 (50)
No	9 (32)	5 (18)	14 (50)
Total (%)	10 (36)	18 (64)	28

(χ^2 = 9.97 df = 1; p = <0.01)

Of the seven babies whose fathers had previous experience, two had been held prior to their father's participation and five had not. Of the 21 babies whose fathers had no previous experience, 12 had been held prior to their father's participation and 19 had not. These differences were not statistically significant (χ^2 = 1.71 df = 1; ns) (see table 12.52).

Table 12.52

Numbers (%) of babies who had been held prior to their father's participation, and whether their father had previous experience or not

Held baby prior to participation	Number (%) of babies with fathers with previous experience	Number (%) of babies with fathers with no previous experience	Total (%)
Yes	2 (7)	12 (43)	14 (50)
No	5 (18)	19 (32)	14 (50)
Total (%)	7 (25)	21 (75)	28

(χ^2 = 1.71 df = 1; ns)

There were 13 babies who had prepared fathers, and three had been held by their father prior to his participation, while 10 had not. Of the 15 babies with unprepared fathers, 11 had been held, while four had not. These differences were significant (χ^2 = 7.036 df = 1; p = <0.01) (see table 12.53).

Table 12.53

Numbers (%) of babies who had been held prior to their father's participation, and whether their father was prepared or not

Held baby prior to participation	Number (%) of babies with prepared fathers	Number (%) of babies with unprepared fathers	Total (%)
Yes	3 (11)	11 (39)	14 (50)
No	10 (36)	4 (14)	14 (50)
Total (%)	13 (46)	15 (54)	28

(χ^2 = 7.036 df = 1; p = <0.01)

12.5 Summary of the samples of mothers, fathers and babies

There was a wide range of characteristics in the samples of mothers and fathers. Despite missing data from the populations, most of the samples' characteristics were similar to the characteristics in the populations or to those expected in populations of mothers and fathers whose baby is in NNU. No evidence could be located to indicate any major differences. Therefore, considering the limitations of recruiting convenience, self-selected samples (Robson 1993), the samples and the populations were deemed to be sufficiently alike to allow for very limited generalisation from these samples to these populations, although not to the wider populations.

From the analysis of the characteristics of the prepared and unprepared parents and those prepared in different ways, it was concluded that, despite minor differences, the sub-groups were sufficiently similar to allow for meaningful comparisons to be made. A self-selected convenience sub-sample of mothers had characteristics similar to those of the sample. Their varying levels of preparedness resulted in a relevant sample of mothers to participate in a semi-structured interview.

The majority of parents were unprepared for their baby's admission to NNU, although this reached significance only for mothers. A minority of parents expected the admission, but of those who did, most of the mothers and all of the fathers were

prepared either by receiving prenatal information and/or having previous experience. However, overall there was a significantly large proportion of parents who expected their baby to be admitted, but had neither received prenatal information nor had previous experience, therefore were unprepared for the admission. Whether the admission was expected or not, the majority of parents had some warning of their baby's admission, whether it was minutes, hours, days or weeks. When parents had only a warning of minutes or hours, preparation may not have been realistic. However, for those with a warning of days or weeks, opportunities for preparation were missed, as some of these parents received no prenatal information, nor had previous experience.

When information was given to parents, the midwife was usually the source, with the neonatologist, a tour of NNU, family and the media identified as the other sources. The topics of which parents had knowledge included what would happen at the birth, where the baby would be taken, and what problems there were likely to be.

There was a wide range of characteristics in the sample babies. However the sample was comprised of babies who were of a slightly younger gestational age than the population, it had a greater proportion of twins than the population and the babies were sicker on the day of admission than those in the population. The degree of sickness of the baby can influence parental anxiety (Harper et al 1976, Blumberg 1980), therefore having a sample that includes a range of degrees of sickness, but with a higher proportion of sicker babies, was considered fortuitous for the purposes of the 'study'.

The gender of the baby was independent of whether the parents were prepared or not and of the type of preparation they had received or not. Significantly larger proportions of mothers of preterm babies had not received prenatal information. Significantly smaller proportions of mothers of term babies had received prenatal information. The gestation of the baby was independent of whether the parents had previous experience, and independent of whether the father had received prenatal

information. However, significantly more parents of preterm babies were prepared overall.

The birth weight of the baby was independent of whether the fathers were prepared or not, whether the fathers had received prenatal information, and whether the parents had previous experience. However, significantly larger proportions of mothers of babies of heavier birth weights had not received prenatal information, and were unprepared overall.

The route of the baby's birth was independent of whether the parents were prepared or not, the type of preparation the mother had or not, and whether the father had received prenatal information or not. However it was significant that the babies of all the fathers with previous experience were born by caesarean section.

The classification of care the baby required on the first day was independent of whether the parents had previous experience or not, and whether the father was prepared or not. The babies of parents who had received information were significantly less likely to require level 2 intensive care or special care on day one. The babies of prepared mothers were significantly more likely to require level 1 intensive care on day one.

Whether the baby had been held or not prior to the father's participation was independent of whether he had previous experience or not. Significantly smaller proportions of parents, who had received prenatal information and/or were prepared overall, had held their baby prior to participation. A significantly smaller proportion of mothers with previous experience had held their baby prior to participation.

A summary of relevant biographical and situational data related to mothers, fathers and babies (based on participating mothers) is given in Appendix 19. There is discussion of these findings in chapter 17.

Findings

Chapter 13

Findings from the State Trait Anxiety Inventory analyses

Introduction

Within this chapter, the findings of the State Trait Anxiety Inventory (STAI) analyses are reported. In the analyses, comparisons were made with the normative data reported by Spielberger et al (1983). While the normative data are referred to by their full title when they are first introduced, they are subsequently referred to as the 'norm'.

For ease of understanding, the chapter is divided into four sections that are sub-divided. In the first two sections the findings from the analysis of the mothers' and fathers' data are respectively reported, with focus on trait anxiety and then on state anxiety. The relationships between the trait and state anxiety are also reported with consideration of the correlation between trait and state anxiety, and then consideration of the differences between trait and state anxiety. This format could be considered too structured and somewhat repetitious, however it is followed to enable distinction between the two sets of findings.

Although the findings from the comparison of mothers' and fathers' data could have been reported in the second section with the findings from the fathers' data, it was decided to form a third section in which to report these findings. The fourth section gives a summary of the STAI findings, first in relation to the mothers, then in relation to the fathers and finally in relation to the comparison of the mothers' and fathers' data.

13.1 Results of the analysis of mothers' STAI data

Analysis of the data from the mothers included comparison with data from a normative group of working adult females aged between 19 and 39 years (Spielberger et al 1983). This normative group was chosen for comparison as 47 (73%) of the mothers reported being employed (see section 12.1.1), although the age range of the mothers was from 16 to 41.5 years. Spielberger et al (1983) indicated that the normative group of working women were heterogeneous with regard to age and level of education, but were all white-collar workers. However there was a wide range of responsibilities in their employment, indicating further heterogenicity.

13.1.1 Mothers' trait anxiety scores

13.1.1.1 All mothers, prepared and unprepared mothers, and trait anxiety scores

The total trait anxiety scores of the mothers had a range of scores of 24 – 64 and a mean trait anxiety score of 35.6. The latter was slightly lower than the normative mean trait anxiety score provided by Spielberger et al (1983) of 36.15 (see table 13.1). However a one sample t-test found no significant difference between the mothers' mean trait anxiety scores of the mothers and the norm ($t = 0.54$ $df = 63$; ns).

The normative mean trait anxiety score showed more variability, with a standard deviation (SD) of 9.53 (Spielberger et al 1983), than the mean trait anxiety score of the mothers, SD 7.98. This finding suggested that the normative group were heterogeneous, as Spielberger et al (1983) had indicated, as compared with the mothers. The characteristics of the mothers indicated diversity (see section 12.1.1). However, the recent completion of a pregnancy that was the common situation for all the mothers, may have influenced the reduced variability of their mean trait anxiety scores from the norm.

The sample in the 'study' included prepared and unprepared mothers. The prepared mothers had a higher mean trait anxiety score of 37.14 (SD 9.2) than the unprepared mothers, 34.34 (SD 6.66) (see table 13.1 and figure 13.1). An independent samples t-test of the mean trait anxiety scores of prepared and unprepared mothers found no significant difference between the scores (t = 1.41 df = 62; ns) (see table 13.1).

Table 13.1

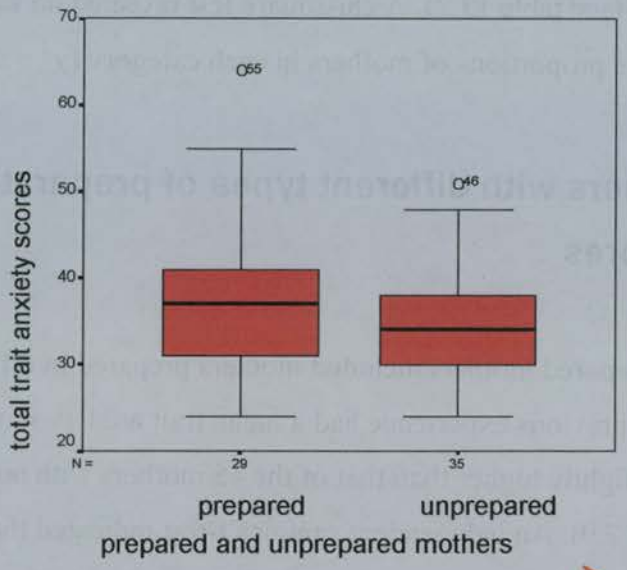
Mean trait anxiety scores (SD) of mothers' sample, and the prepared and unprepared sub-groups of these mothers, and the normative data reported by Spielberger et al (1983)

Mean trait anxiety scores (SD)			
Normative data for adult working females aged 19-39 years	**Total mothers' sample**	**Sub-groups of mothers**	
	n= 64	**Prepared n= 29**	**Unprepared n = 35**
36.15 (9.53)	35.6 (7.98)	37.14 (9.2)	34.34 (6.66)
t = 0.54 df = 63; ns		*t = 1.41 df = 62; ns*	

The prepared mothers' mean trait anxiety score, 37.14, was higher than the normative mean trait anxiety score, 36.15, while the unprepared mothers' mean trait anxiety score, 34.34, was lower. However one sample t-tests indicated that there were no significant differences between the mean trait anxiety scores of prepared mothers and the normative mean trait anxiety score (t = 0.58 df = 28; ns), nor between the mean trait anxiety scores of unprepared mothers and the normative mean trait anxiety scores (t = 1.6 df = 34; ns).

Figure 13.1

Boxplot showing range of prepared and unprepared mothers' total trait anxiety scores



The trait anxiety scores of the prepared and unprepared mothers were sub-divided according to Spielberger et al's (1983) divisions. Low levels of anxiety were suggested by total scores of 20-39, moderate anxiety was suggested by total scores of 40-59, and severe anxiety was suggested by total scores of 60-80 (see table 13.2).

Table 13.2

Number (%) of prepared and unprepared mothers in each level of trait anxiety, as defined by Spielberger et al (1983)

Levels of anxiety	Number (%) of prepared mothers	Number (%) of unprepared mothers	Total (%)
Low anxiety 20-39 (%)	19 (30)	27 (42)	46 (72)
Moderate anxiety 40-59 (%)	9 (14)	8 (13)	17 (27)
Severe anxiety 60-80 (%)	1 (2)	0 (0)	1 (2)
Total (%)	29 (45)	35 (55)	64

(χ^2 = 1.9 df = 2; ns)

There was some variation in levels of trait anxiety, but the majority of mothers, 46 (72%), had low trait anxiety, and the majority of these mothers were unprepared, 27 (42%). Only one (2%) mother had a level of trait anxiety that was defined as severe and she was prepared (see table 13.2). A chi-square test revealed no significant difference between the proportions of mothers in each category ($\chi^2 = 1.9$ df = 2; ns).

13.1.1.2 Mothers with different types of preparation and trait anxiety scores

The sub-sample of prepared mothers included mothers prepared in different ways. The 19 mothers with previous experience had a mean trait anxiety score of 36.11 (SD 8.35), that was slightly higher than that of the 45 mothers with no previous experience, 35.4 (SD 7.9). An independent samples t-test indicated there was no significant difference between these scores (t = 0.32 df = 62; ns) (see table 13.3).

The 18 mothers given prenatal information had a mean trait anxiety score of 37.17 (SD 10.25), slightly higher than that of the 46 mothers given no prenatal information, 35 (SD 6.93). An independent samples t-test indicated there was no significant difference between these scores (t = 0.98 df = 62; ns) (see table 13.3).

Table 13.3

Mean trait anxiety scores (SD) of mothers with previous experience or not, and given prenatal information or not

	Mothers with previous experience n = 19	Mothers with no previous experience n = 45	Mothers given prenatal information n = 18	Mothers not given prenatal information n = 46
Mean trait anxiety scores (SD)	36.11 (8.35)	35.4 (7.9)	37.17 (10.25)	35 (6.93)
	t = 0.32 df = 62; ns		*t = 0.98 df = 62; ns*	

An independent samples t-test indicated there was no significant difference between the mean trait anxiety score for mothers who had previous experience, 36.1, and those who had been given prenatal information, 37.17, ($t = 0.44$ $df = 17$; ns). Neither was there any difference between the mean trait anxiety score for mothers who had no previous experience, 35.4, and those who had not been given prenatal information 35, ($t = 0.39$ $df = 45$; ns).

Therefore prepared and unprepared mothers, and mothers prepared in different ways, had similar levels of trait anxiety, thus comparisons between all these groups and sub-groups were justified.

13.1.2 Mothers' state anxiety scores

13.1.2.1 All mothers, and prepared and unprepared mothers, and state anxiety scores

The total state anxiety scores of the mothers had a range of scores of 20 – 74, slightly wider than their total trait anxiety range of scores (24 – 64). The mean state anxiety score of 43.65 for the mothers was higher than the normative mean state anxiety score of 36.17, provided by Spielberger et al (1983) (see table 13.4). A one sample t-test indicated there was a highly significant difference between the mean state anxiety scores mothers and the norm ($t = 4.5$ $df = 63$; $p = <0.001$). However it is important to note that the normative mean state anxiety score was obtained under what Spielberger et al (1983 p14) referred to as "non-stressful" conditions. It was therefore to be expected that the mothers would demonstrate significantly higher levels of state anxiety as they had been exposed to a potentially anxiety-provoking situation/potential crisis.

The prepared mothers had a mean state anxiety score of 43.37 (SD 11.09), that was very slightly lower than that of the unprepared mothers, 43.88 (SD 15.06) (see table 13.4 and figure 13.2). An independent samples t-test of the mean state anxiety scores

of prepared and unprepared mothers was undertaken and no significant difference between them was found (t = 0.15 df = 62; ns).

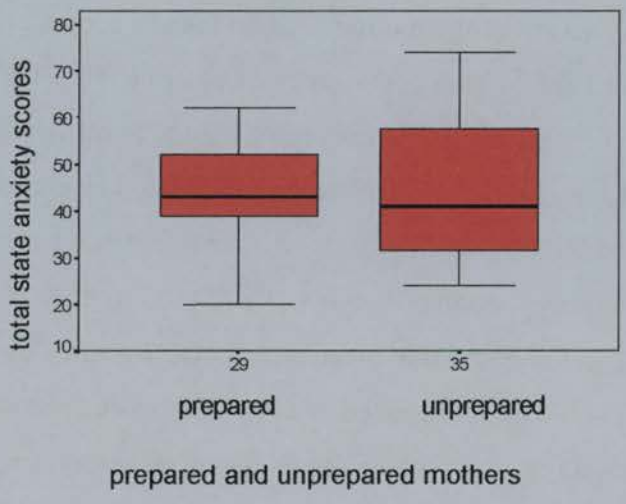
Table 13.4

Mean state anxiety scores (SD) for mothers' sample and the prepared and unprepared sub-groups of these mothers, and normative data from a non-stressful situation reported by Spielberger et al (1983)

Mean state anxiety scores (SD)			
Mothers' sample		Sub-groups of mothers	
Total n=64	Normative non-stressful situation	Prepared n=29	Unprepared n=35
43.65 (13.31)	36.17 (10.96)	43.37 (11.09)	43.88 (15.06)
t = 4.5 df = 63; p = <0.001		*t = 0.15 df = 62; ns*	

Figure 13.2

Boxplot showing range of prepared and unprepared mothers' total state anxiety scores



There was no significant difference between the mean state anxiety scores for prepared and unprepared mothers, but a significant difference between the mean state anxiety scores for these mothers and the norm. Using one sample t-tests, significant differences were found between the mean state anxiety scores of

prepared mothers and the norm ($t = 3.5$ $df = 28$; $p = <0.01$) and those of unprepared mothers and the norm ($t = 3.03$ $df = 34$; $p =< 0.01$).

Therefore prepared and unprepared mothers had similar levels of state anxiety when their baby was admitted to NNU, and these levels of anxiety were, as expected, significantly higher than the norm.

The normative mean state anxiety scores indicated less variability in the level of anxiety, with a SD of 10.96 (Spielberger et al 1983), than the mean state anxiety score reported by the mothers, with a SD of 13.31 (see table 13.4). Whereas the trait anxiety score variability suggested the mothers were similar in their usual level of anxiety, this finding indicated that in a potentially anxiety provoking situation/potential crisis, the state anxiety scores of the mothers were more variable. Further examination of the variability of the mean state anxiety scores showed that the unprepared mothers had a much wider variability (SD 15.06) than the prepared mothers (SD 11.09). Indeed the variability of the prepared mothers mean state anxiety scores was similar to the normative mean state anxiety score data generated in a non-stressful situation (SD 10.96). Many factors may have influenced this increased variability and these were considered as the analysis of the data progressed.

Spielberger et al (1983) undertook further experiments with male and female college students to provide mean anxiety scores in four situations that were described as relaxed, normal, stressful and very stressful. In each situation, mean scores were calculated. The normal situation yielded mean trait anxiety scores for this group, 37.24 (SD 10.27). In the situation defined as stressful, the students were asked to imagine how they would feel just before taking the final examination in an important course. The mean state anxiety score for female students was 43.69 (SD 11.59). In the very stressful situation, the students were asked to watch a film, described as stressful as it depicted several accidents in a woodwork factory. The mean state anxiety score for female students was 60.94 (SD 11.99). This expected finding indicated that in situations perceived by the college students as more

stressful, their mean state anxiety score increased from low anxiety, through moderate to severe anxiety.

The mean state anxiety score reported by the mothers, 43.65, was similar to the mean state anxiety score reported by female students in the stressful situation of imagining how they would feel taking an examination, 43.69. The mean state anxiety score of 60.94 that the female students demonstrated in the very stressful situation was much higher than the mean state anxiety score the mothers reported. However, the characteristics of the two groups, the mothers and the female college students, are different, making direct comparison of these findings difficult. However, had the samples been comparable, the finding suggests several possibilities.

Table 13.5

Comparison of mothers' mean state anxiety scores (SD) between studies

Study	Mean state anxiety score (SD)
'study'	43.65 (13.31)
Blumberg (1980)	46.57 (11.71)
Gennaro (1986)	44.1 (12.1)
Gennaro (1988)	37.6 (7.1)

The first possibility is that the data generation tool, the STAI, was an unreliable measure of state anxiety with the mothers recruited to the 'study'. However the STAI has documented reliability with many varying samples, including with samples of mothers whose baby has been admitted to the NNU (Blumberg 1980, Spielberger et al 1983, Gennaro 1986 and 1988). Trait anxiety was not measured in all these studies, therefore only the total mean state anxiety scores reported could be compared with those found in the 'study' (see table 13.5). The mean state anxiety scores (SD) for mothers reported in these previous studies and the mean state anxiety scores (SD) found in the 'study' varied. The mean scores were more similar, with most scores in the moderate anxiety range, 40 – 59. This similarity suggested that the STAI was reliable with the mothers recruited to the 'study'. However the

standard deviations were more widely varied, suggesting doubt over the reliability of the tool with populations of postnatal mothers (see section 15.4 and 17.2).

Another possibility is that the situation of NNU admission that has been described as a crisis situation (Caplan et al 1965), was not perceived as such by the mothers. Exploration of the qualitative data indicated that none of the mothers used the term crisis (see 14.1.1.2). It could therefore be suggested that the prepared and unprepared mothers perceived the situation of having their baby admitted to the NNU as only slightly more anxiety-provoking than normal.

The mean state anxiety scores of prepared and unprepared mothers were sub-divided according to Spielberger et al's (1983) divisions, as described in section 13.1.1.1 (see table 13.6).

Table 13.6

Number (%) of prepared and unprepared mothers in each level of state anxiety, as defined by Spielberger et al (1983)

Levels of anxiety	Number (%) of prepared mothers	Number (%) of unprepared mothers	Total (%)
Low anxiety 20-39 (%)	11 (17)	16 (25)	27 (42)
Moderate anxiety 40-59 (%)	16 (25)	12 (19)	28 (44)
Severe anxiety 60-80 (%)	2 (3)	7 (11)	9 (14)
Total (%)	29 (45)	35 (55)	64

(χ^2 =3.75 df = 2; ns)

Similar numbers of prepared and unprepared mothers were in the low and moderate state anxiety ranges. There were nine (14%) mothers, two (3%) prepared and seven (11%) unprepared, who reported a level of state anxiety that was defined as severe. A chi-square test revealed no significant difference between the proportions of mothers in each category (χ^2 =3.75 df = 2; ns) (see table 13.6).

13.1.2.2 Mothers with different types of preparation and state anxiety scores

The 19 mothers with previous experience had a mean state anxiety score of 41.63 (SD 10.88), slightly lower than that of the 45 mothers with no previous experience, 44.5 (SD 14.24). An independent samples t-test indicated there was no significant difference between these scores (t = 0.79 df = 62; ns) (see table 13.7).

Table 13.7

Mean state anxiety scores (SD) of mothers with previous experience or not, and given prenatal information or not

	Mothers with previous experience n = 19	Mothers with no previous experience n = 45	Mothers given prenatal information n = 18	Mothers not given prenatal information n = 46
Mean state anxiety scores (SD)	41.63 (10.88)	44.51 (14.24)	47.06 (10.59)	42.33 (14.11)
	t = 0.79 df = 62; ns		*t = 1.29 df = 62 ; ns*	

The 18 mothers given prenatal information had a mean state anxiety score of 47.06 (SD 10.59), higher than that of the 46 mothers given no prenatal information, 42.33 (SD 14.11). An independent samples t-test indicated there was no significant difference between these scores (t = 1.29 df = 62; ns) (see table 13.7).

A one-sample t-test indicated that mothers with previous experience had a significantly lower mean state anxiety score, 41.63, than mothers given prenatal information, 47.06 (t = 2.18 df = 17; p = <0.05). A one-sample t-test indicated that there was no significant difference between the mean state anxiety scores of mothers with no previous experience, 44.51, and those given no prenatal information, 42.33 (t = 1.03 df = 44; ns).

13.1.2.3 Holding baby prior to participation and mothers' state anxiety scores

An independent samples t-test indicated that the 40 mothers who had held their baby prior to participation had a significantly lower mean state anxiety score of 39.05 (SD 12.80), than did the 24 mothers who had not held their baby, 51.33 (SD 10.45) ($t = 3.97$ $df = 62$; $p = <0.001$) (see table 13.8).

Table 13.8

Mean state anxiety scores (SD) of mothers who had held their baby or not prior to participation

Mothers' mean state anxiety scores (SD)	
Held baby n = 40	Not held baby n = 24
39.05 (12.80)	51.33 (10.45)
t = 3.97 df = 62; p = <0.001	

There were 29 prepared mothers, of whom 11 had held their baby prior to participation and 18 had not. An independent samples t-test indicated that the mean state anxiety score of the prepared mothers who had held their baby, 33.64 (SD 7.10) was significantly lower than that of the prepared mothers who had not held their baby, 49.33 (SD 8.6) ($t = 5.08$ $df = 27$; $p = <0.001$) (see table 13.9).

There were 35 unprepared mothers, of whom 29 had held their baby prior to participation and 6 had not. An independent samples t-test indicated that the mean state anxiety score of the unprepared mothers who had held their baby, 41.10 (SD 13.94) was significantly lower than that of the unprepared mothers who had not held their baby, 57.33 (SD 13.88) ($t = 2.59$ $df = 33$; $p = <0.05$) (see table 13.9).

Table 13.9

Mean state anxiety scores (SD) of prepared and unprepared mothers, who had held or not held their baby prior to participation

	Prepared mothers n = 29		Unprepared mothers n = 35	
	Held baby n = 11	Not held baby n = 18	Held baby n = 29	Not held baby n = 6
Mean state anxiety scores (SD)	33.64 (7.10)	49.33 (8.6)	41.10 (13.94)	57.33 (13.88)
	t = 5.08 df = 27; p = <0.001		*t = 2.59 df = 33; p = 0.05*	

A one sample t-test indicated that the prepared mothers who had held their baby had a very significantly lower mean state anxiety score, 33.64, than the unprepared mothers who had held their baby, 41.10 (t = 3.49 df = 10; p = <0.01).

There were 19 mothers with previous experience, eight had held their baby prior to participation and 11 had not. An independent samples t-test indicated that mothers with previous experience who had held their baby had a very significantly lower mean state anxiety score, 33.75 (SD 8.12), than those mothers with experience who had not held their baby, 47.36 (SD 9) (t = 3.39 df = 17; p = <0.01) (see table 13.10).

Table 13.10

Mean state anxiety scores (SD) of mothers with previous experience or not, who had held or not held their baby prior to participation

	Mothers with previous experience n = 19		Mothers with no previous experience n = 45	
	Held baby n = 8	Not held baby n = 11	Held baby n = 32	Not held baby n = 13
Mean state anxiety scores (SD)	33.75 (8.12)	47.36 (9)	40.38 (13.5)	54.69 (10.72)
	t = 3.39 df = 17; p = <0.01		*t = 3.41 df = 43 ; p = 0.001*	

There were 45 mothers with no previous experience, 32 had held their baby prior to participation and 13 had not. An independent samples t-test indicated that mothers with no previous experience who had held their baby had a very significantly lower mean state anxiety score, 40.38 (SD 13.5), than those mothers with no previous experience who had not, 54.69 (SD 10.72) ($t = 3.41$ $df = 43$; $p = 0.001$) (see table 13.10).

A one sample t-test indicated that there was no significant difference between the mean state anxiety scores of mothers with previous experience who had held their baby, 33.75, and mothers with no previous experience who had held their baby, 40.38 ($t = 2.31$ $df = 7$; ns), although the level of significance was almost reached, $p = 0.054$).

There were 18 mothers given prenatal information, four had held their baby prior to participation and 14 had not. An independent samples t-test indicated that mothers given prenatal information who had held their baby had a very significantly lower mean state anxiety score, 31.75 (SD 7.68), than those mothers given prenatal information who had not held their baby 51.43 (SD 6.37) ($t = 5.23$ $df = 16$; $p = <0.0001$) (see table 13.11).

Table 13.11

Mean state anxiety scores (SD) of mothers given prenatal information or not, who had held or not held their baby prior to participation

	Mothers given prenatal information n = 18		Mothers not given prenatal information n = 46	
	Held baby n = 4	Not held baby n = 14	Held baby n = 36	Not held baby n = 10
Mean state anxiety scores (SD)	31.75 (7.68)	51.43 (6.37)	39.86 (13.07)	51.2 (14.84)
	t = 5.23 df = 16; p = <0.0001		*t = 2.36 df = 44 ; p =< 0.05*	

There were 46 mothers who had not been given prenatal information, 36 had held their baby prior to participation and 10 had not. An independent samples t-test indicated that mothers given no prenatal information who had held their baby had a significantly lower mean state anxiety score, 39.86 (SD 13.07), than mothers given no prenatal information who had not held their baby 51.2 (SD 14.84) ($t = 2.45$ $df = 45$; $p = <0.05$) (see table 13.11).

A one sample t-test indicated that there was no significant difference between the mean state anxiety scores of mothers given prenatal information who had held their baby, 31.75, and mothers given no prenatal information who had held their baby, 39.86 ($t = 2.11$ $df = 3$; ns).

13.1.2.4 Time of the mothers' participation and state anxiety scores

Mothers participated across the range of time slots (see section 12.1.2.2). To facilitate comparison between the mean state anxiety scores of the mothers who participated early in their baby's stay and those who participated later in their baby's stay, the data on times of participation were recoded into two categories, participated within 48 hours and participated after 49 hours.

Table 13.12

State anxiety scores (SD) of mothers who participated within 48 hours of their baby's admission and after 49 hours of their baby's admission

Mothers' mean state anxiety scores (SD)	
participated within 48 hours n = 14	*participated after 49 hours n = 50*
44.79 (9.55)	*43.34 (14.25)*
t = 0.36 df = 62; ns	

There were no significant differences between the mean state anxiety scores of mothers regardless of whether they participated earlier or later in their baby's stay ($t = 0.36$ df $= 62$; ns) (see table 13.12).

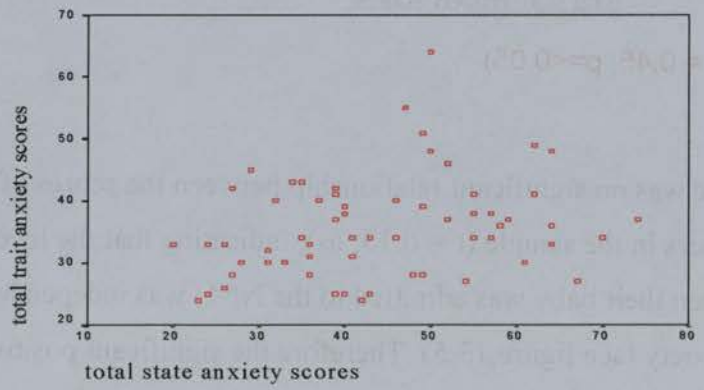
13.1.3 Relationships between mothers' trait and state anxiety scores

13.1.3.1 Correlation between trait and state anxiety scores

Spielberger et al (1983) found that trait anxiety had a positive correlation with state anxiety, therefore it was relevant to establish the nature of any relationship between the mothers' trait and state anxiety levels. This positive correlation was confirmed for these mothers. The scatterplot (see figure 13.3) suggests a significant positive correlation between the total state and trait anxiety scores of the sample mothers and Pearson's test of correlation confirmed this ($r = 0.26$; $p = <0.05$). The higher a mother's total trait anxiety score was, the higher her total state anxiety score was when she experienced the potentially anxiety-provoking situation/potential crisis of having a baby admitted to the NNU.

Figure 13.3

Scatterplot showing the positive relationship between the mothers' total trait and state anxiety scores



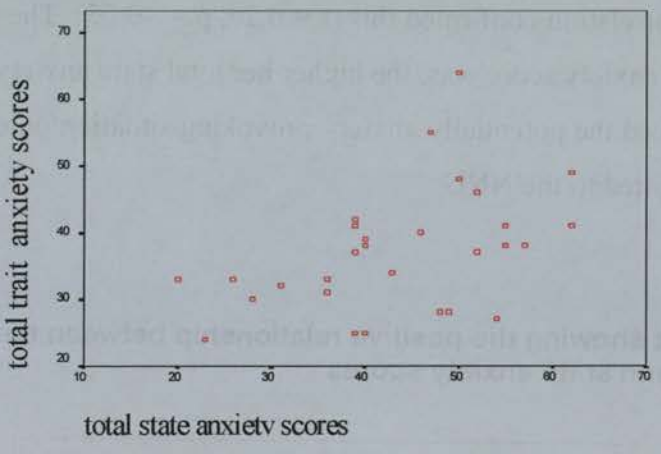
(r = 0.26; p = <0.05)

However it was important to establish if this finding was associated with whether the mother was prepared or not and whether the relationship predicted by Spielberger et al (1983) would be confirmed for the prepared and the unprepared mothers. Therefore the trait and state anxiety scores of prepared and unprepared mothers were examined separately.

For prepared mothers there was a highly significant positive correlation between the trait and state anxiety scores ($r = 0.45$; $p = <0.05$) (see figure 13.4). The more anxious the prepared mothers usually were, the more anxious they were likely to be when their baby was admitted to the NNU.

Figure 13.4

Scatterplot showing the positive relationship between prepared mothers' total trait and state anxiety scores



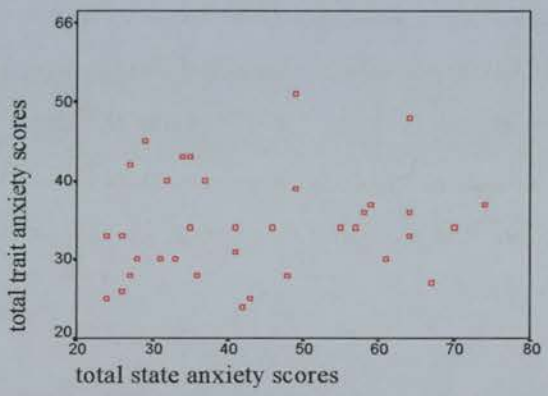
(r = 0.45; p=<0.05)

By contrast, there was no significant relationship between the scores of the unprepared mothers in the sample ($r = 0.13$; ns), indicating that the level of anxiety they reported when their baby was admitted to the NNU was independent of their usual level of anxiety (see figure 13.5). Therefore the significant positive correlation between total trait and state anxiety scores for the total sample of mothers ($r = 0.26$; $p = <0.05$), appears to have been strongly influenced by the contribution of the

positive correlation between the prepared mothers' total trait and state anxiety scores.

Figure 13.5

Scatterplot showing no relationship between unprepared mothers' total trait and state anxiety scores



(r = 0.13; ns)

A significant positive correlation does not indicate cause and effect, but does enable confident predictions that the demonstrated relationship could be repeated with other prepared mothers (Hicks 1996). It can be concluded therefore that prepared mothers who are usually anxious are more likely to be anxious if their baby is admitted to the NNU, however no such prediction can be made regarding the unprepared mother.

The preparation for potentially anxiety-provoking events has been shown to reduce the anxiety subsequently experienced (Lazarus 1966, Lazarus and Launier 1981). If such a cause and effect relationship applied to the sample of prepared mothers, it could be suggested that the levels of state anxiety they demonstrated were less than would have been expected if there had been no preparation. An alternative explanation for the positive correlation of the prepared mothers' state and trait anxiety scores, had a cause and effect relationship been established, is that the preparation made no difference to the level of anxiety and these mothers were responding to an anxiety-provoking situation as would be expected (Blumberg 1980, Spielberger et al 1983, Gennaro 1986 and 1988).

It has been suggested that the anxiety experienced in an anxiety-provoking situation or crisis could be channeled to help an individual cope (Mason 1963, Harper et al 1976, Brunssen and Miles 1996). Therefore the levels of state anxiety experienced by prepared mothers may have been beneficial to them in trying to cope with having their baby in NNU.

The finding that the levels of state anxiety experienced by unprepared mothers were independent of their trait anxiety levels contradicted the predicted relationship (Spielberger et al 1983). One explanation for this is that these women did not perceive the admission of their baby to the NNU as anxiety-provoking, therefore their level of anxiety did not rise as would be expected had they perceived the situation as anxiety-provoking.

Alternatively they may have perceived the situation as extremely anxiety-provoking, so much so that the situation was almost a crisis for them. With this perception, some of the mothers may have used the coping mechanism of denial (Kubler-Ross 1969, Parkes 1972). By blocking the seriousness of the situation and therefore their feelings, they could cope with the situation. Denial of feelings in this way may have affected the mothers' completion of the state trait anxiety inventory (STAI), and led to the aberrant findings.

13.1.3.2 Differences between trait and state anxiety scores

In order to explore the relationship of trait and state anxiety scores further, the difference between the individual scores was calculated. For the purpose of the 'study', a difference was deemed to exist if the state anxiety score varied by more than 10 points from the trait anxiety score (see section 8.2).

The expected difference was that the state anxiety score would be more than 10 points above the trait anxiety score, as the mothers were in a potentially anxiety-provoking situation/crisis. Only 26 (41%) mothers demonstrated this expected difference in their anxiety scores, i.e. they were more anxious than usual.

A state score of more than 10 points less than the trait score was found for four (6%) mothers, i.e. they were less anxious than usual. However the largest proportion of mothers, 53%, had state anxiety scores that were within 10 points of their trait scores, i.e. they were no more or less anxious than they usually were (see table 13.13).

Of the 29 mothers who were prepared, approximately half of them, 16 mothers, *were* no more or less anxious than they usually were. There were 11 mothers who were more anxious than usual, and two were less anxious than usual (see table 13.13).

Table 13.13

Number (%) of prepared and unprepared mothers whose state anxiety score was equal to (within 10 points of), higher than (increase of more than 10 points above) or lower than (decrease of more than 10 points below) the trait anxiety score

	Number (%) of prepared mothers	Number (%) of unprepared mothers	Total (%)
State anxiety score higher than the trait anxiety score (increase of more than 10 points)	11 (17)	15 (24)	26 (41)
State anxiety score lower than the trait anxiety score (decrease of more than 10 points)	2 (3)	2 (3)	4 (6)
State anxiety score within 10 points of the trait anxiety score	16 (25)	18 (28)	34 (53)
Total (%)	29 (45)	35 (55)	64

(χ^2 = 0.17 df = 2; ns)

Of the 35 mothers who were unprepared, approximately half of them, 18 mothers, were no more or less anxious than they usually were. There were 15 mothers who were more anxious than usual, and two were less anxious than usual (see table 13.13).

A small number of mothers, four (6%), were less anxious than usual. For the two prepared mothers, their preparation might have been related to their perception of the situation as anxiety-provoking/crisis, resulting in this difference between their trait and state anxiety scores. However, this reasoning does not explain why the two unprepared mothers were less anxious than usual. An alternative explanation is that, regardless of any preparation, these four mothers viewed admission of their baby to NNU as a positive situation, resulting in their state anxiety score being more than 10 points lower than their trait anxiety score.

Alternatively, all four of these mothers could have perceived the situation as so anxiety-provoking that the only way to cope with it at that time was to deny the situation and their feelings. This may have resulted in their state anxiety score being more than 10 points lower than their trait anxiety score (Kubler-Ross 1969, Parkes 1972).

While speculating on these possible reasons for the differences or not between trait and state scores for the mothers, it is also important to note that chi-square testing revealed no significant difference between the proportions of the mothers in each category ($\chi^2 = 0.172$ df = 2; ns).

13.2 Results of the analysis of fathers' STAI data

Analysis of the data from the fathers included comparison with data from a normative group of working adult males aged between 19 and 39 years (Spielberger et al 1983). This normative group was chosen for comparison as 92% of the fathers reported being employed (see section 12.3.1), although the age range of the fathers was from 16 to 40 years. Spielberger et al (1983) indicated that the normative group of working males were heterogeneous with regard to age and level of education, but

were all white-collar workers. However there was a wide range of responsibilities in their employment, indicating further heterogenicity.

13.2.1 Fathers' trait anxiety scores

13.2.1.1 All fathers, prepared and unprepared fathers, and trait anxiety scores

While data were generated from 25 fathers, only 24 complete STAI inventories could be analysed. As fewer fathers had been recruited to the study than planned (see section 10.2.1), and the sample was small, inferential statistical testing was undertaken but the results are cautiously interpreted.

The total trait anxiety scores of the fathers had a range of scores of 23 – 52. The mean trait anxiety score of 33.96 for the fathers was similar to the normative mean trait anxiety score provided by Spielberger et al (1983) of 35.55 (see table 13.14). A one sample t-test found no significant difference between the total trait anxiety scores of the fathers and the norm ($t = 1.05$ $df = 2$; ns).

The normative mean trait anxiety score indicated more variability in the level of trait anxiety, SD 9.76 (Spielberger et al 1983), than the mean trait anxiety scores of the fathers, SD 7.46. This finding suggested that the normative group were heterogeneous, as Spielberger et al (1983) had indicated, while the fathers appeared more homogeneous. The characteristics of the fathers indicated diversity (see section 12.3.1). However, the recent completion of their partner's pregnancy that was the common situation for all the fathers, may have influenced the reduced variability of their mean trait anxiety scores from the norm.

The sample in the 'study' included prepared and unprepared fathers. The 11 prepared fathers had a lower mean trait anxiety score, 30.55 (SD 6.39) than the 13 unprepared fathers, 36.85 (SD 7.27) (see table 13.14 and figure 13.6). This finding suggested that unprepared fathers were usually more anxious than prepared fathers.

This was confirmed by an independent samples t-test that showed a significant difference between the trait anxiety scores in the prepared and unprepared fathers ($t = 2.22$ $df = 22$; $p=<0.05$).

Table 13.14

Mean trait anxiety scores (SD) of fathers' sample, and the prepared and unprepared sub-groups of these fathers, and the normative data reported by Spielberger et al (1983)

Mean trait anxiety scores (SD)			
Normative data for adult working males aged 19-39 years	Total fathers' sample	Sub-groups of fathers	
	n=24	Prepared n=11	Unprepared n=13
35.55 (9.76)	33.96 (7.46)	30.55 (6.39)	36.85 (7.27)
t = 1.05 df = 2; ns		*t = 2.22 df = 22; p=<0.05*	

Figure 13.6

Boxplot showing range of prepared and unprepared fathers' total trait anxiety scores

The prepared fathers' mean trait anxiety score of 30.55 was lower than the normative mean trait anxiety score of 35.55, while the unprepared fathers' mean

anxiety score of 36.85 was slightly higher than the norm. These findings suggested that the prepared fathers were usually less anxious than would be expected and the unprepared fathers had a trait anxiety similar to the norm. These findings were confirmed by one sample t-tests that indicated that there was a significant difference between the mean trait anxiety scores of prepared fathers and the norm ($t = 2.6$ $df = 10$; $p=<0.05$), but no significant difference between the mean trait anxiety scores of unprepared fathers and the norm ($t = 0.64$ $df = 12$; ns).

The prepared and unprepared fathers' trait anxiety scores were sub-divided according to Spielberger et al's (1983) divisions (see section 13.1.1 and table 13.15).

The majority of fathers, 19 (79%), had low trait anxiety, with similar numbers of prepared and unprepared fathers. Five (21%) fathers had a level of trait anxiety that was defined as moderate and only one (4%) of these fathers was prepared. No fathers had levels of trait anxiety that could be defined as severe (see table 13.15). A chi-square test revealed no significant difference between the proportions of fathers in each category ($\chi^2 = 1.9$ $df = 2$; ns).

Table 13.15

Number (%) of prepared and unprepared fathers with low and moderate trait anxiety, as defined by Spielberger et al (1983)

Levels of anxiety	Number (%) of prepared fathers	Number (%) of unprepared fathers	Total (%)
Low anxiety 20-39 (%)	10 (42)	9 (38)	19 (79)
Moderate anxiety 40-59 (%)	1 (4)	4 (17)	5 (21)
Total (%)	11 (46)	13 (55)	24

($\chi^2 = 1.9$ $df = 2$; ns)

13.2.1.1 Fathers with different types of preparation and trait anxiety scores

The sub-sample of prepared fathers included fathers prepared in different ways. The seven fathers with previous experience had a mean trait anxiety score of 31.86 (SD 6.59), that was lower than that of the 17 fathers with no previous experience, 34.82 (SD 7.80). An independent samples t-test indicated there was no significant difference between these scores (t = 0.88 df = 22; ns) (see table 13.16).

The eight fathers given prenatal information had a mean trait anxiety score of 30.63 (SD 5.34), lower than that of the 16 fathers given no prenatal information, 35.62 (SD 7.94). An independent samples t-test indicated there was no significant difference between these scores (t = 1.6 df = 22; ns) (see table 13.16).

Table 13.16

Mean trait anxiety scores (SD) of fathers with previous experience or not, and given prenatal information or not

	Fathers with previous experience n = 7	Fathers with no previous experience n = 17	Fathers given prenatal information n = 8	Fathers not given prenatal information n = 16
Mean trait anxiety scores (SD)	31.86 (6.59)	34.82 (7.80)	30.63 (5.34)	35.62 (7.94)
	t = 0.88 df = 22; ns		*t = 1.6 df = 22; ns*	

An independent samples t-test indicated there was no significant difference between the mean trait anxiety score for fathers who had previous experience, 31.86, and those who had been given prenatal information 30.63, (t = 0.49 df = 6: ns). An independent samples t-test indicated that there was no significant difference between

the mean trait anxiety score for fathers who had no previous experience, 34.82, and those who had not been given prenatal information 35.62, ($t = 0.42$ $df = 16$; ns)

While unprepared fathers were significantly more anxious usually than prepared fathers and prepared fathers were usually significantly less anxious than the norm, there were no significant differences between fathers prepared in different ways. Comparisons were made between prepared and unprepared fathers, and between fathers prepared in different ways. However findings were interpreted in light of the small sample numbers and the significant difference between prepared and unprepared fathers.

13.2.2 Fathers' state anxiety scores

13.2.2.1 All fathers, prepared and unprepared fathers, and state anxiety scores

The total state anxiety scores of the fathers had a range of scores of 21 - 73, wider than their trait anxiety range of scores of 23 – 52. The mean state anxiety score of 42.45 for the fathers was higher than the normative mean state anxiety score of 36.54 provided by Spielberger et al (1983) (see table 13.17) and a one sample t-test confirmed a significant difference between the scores ($t = 2.37$ $df = 23$; $p = <0.05$). However, it is important to note that the normative mean state anxiety scores were obtained under conditions Spielberger et al (1983 p14) referred to as "non-stressful". It was therefore to be expected that the fathers would demonstrate significantly higher levels of state anxiety as they were being exposed to a potentially anxiety-provoking situation/potential crisis during the data generation.

The prepared fathers had a mean state anxiety score of 45.55 (SD 11.84), higher than the unprepared fathers, whose mean state anxiety score was 39.85 (SD 12.41) (see table 13.17 and figure 13.7). An independent samples t-test of the mean state anxiety scores of these two sub-groups was undertaken and no significant difference

was found (t = 1.15 df = 22; ns).

There was no significant difference between the mean state anxiety scores for prepared and unprepared fathers, but there was a significant difference between the mean state anxiety scores for the whole sample of fathers and the norm. Using one sample t-tests, a significant difference was found between the mean state anxiety scores of prepared fathers and the norm (t = 2.52 df = 10; p = <0.05), but no significant difference was found between the mean state anxiety scores of unprepared fathers and the norm (t = 0.96 df = 20; ns).

Table 13.17

Mean state anxiety scores (SD) for fathers' sample and the prepared and unprepared sub-groups of these fathers, and normative data from a non-stressful situation reported by Spielberger et al (1983)

Mean state anxiety scores (SD)			
Fathers' sample		Sub-groups of fathers	
Total n = 24	Normative non-stressful situation	Prepared n = 11	Unprepared n = 13
42.45 (12.24)	36.54 (10.22)	45.55 (11.84)	39.85 (12.41)
t = 2.37 df = 23; p = <0.05		*t = 1.15 df = 22; ns*	

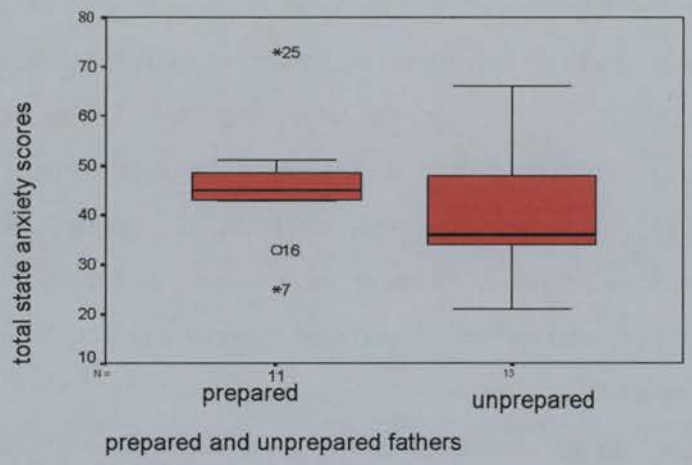
These findings indicate that while prepared and unprepared fathers had similar levels of anxiety when their baby was admitted to the NNU, the prepared fathers' mean state anxiety levels were significantly higher than the norm. One reason for the finding might have been the influence of the extreme scores/outliers.

The boxplot indicates three outliers in the prepared fathers' group (see figure 13.7). Two scores are much lower and one score much higher than the majority of the prepared fathers' group. The possible effect on the data of the outliers was considered. The range of total state anxiety scores for the prepared and unprepared fathers was similar. For prepared fathers the range was 25 – 73 and for unprepared fathers the range was 21 – 66. The narrower standard deviation of the prepared

fathers' total state anxiety scores, 11.84, indicates slightly less variability than for the unprepared fathers whose standard deviation was 12.41. Therefore the prepared fathers were more anxious than the unprepared fathers and the prepared fathers were more similar in their level of state anxiety than were the unprepared fathers. It was concluded that the pressure of the outliers was a factor in this finding, although there were possibly other undetermined factors exerting influence.

Figure 13.7

Boxplot showing range of prepared and unprepared fathers' total state anxiety scores



The normative mean state anxiety score indicated less variability in the level of anxiety, with a standard deviation of 10.22 (Spielberger et al 1983), than the state anxiety reported by the fathers, with a SD of 12.24 (see table 13.17). This finding suggested the fathers had diverse perceptions in an anxiety-provoking situation/potential crisis than the perceptions in the group of adult working males who provided the normative data.

As indicated in section 12.1.1, Spielberger et al (1983) conducted experiments with male and female college students to provide mean state anxiety scores in stressful and very stressful situations. The mean state anxiety score for the male students

under stressful conditions was 43.01 (SD 11.23) and in the very stressful situation, the mean state anxiety score was 50.03 (SD 12.48).

While acknowledging that there was no significant difference between the prepared and unprepared fathers' mean state anxiety scores, it was considered appropriate to descriptively compare the normative scores reported for male college students in stressful and very stressful situations.

The mean state anxiety score reported by the fathers, 42.45, was similar to the mean state anxiety score reported by male students in the stressful situation of imagining how they would feel taking an examination, 43.01. The mean state anxiety score of 50.03 that the male students demonstrated in the very stressful situation was much higher than the mean state anxiety score the fathers reported. The unprepared fathers' mean state anxiety score, 39.85 was closer to the male students' normative mean state anxiety scores in the non-stressful situation. The prepared fathers' mean state anxiety scores were similar to the mean state anxiety scores for the stressful situation. Therefore prepared fathers appeared to be more anxious than unprepared fathers in an anxiety-provoking situation. The unprepared fathers were only slightly more anxious than would be expected in a non-stressful situation.

The characteristics of the two samples, male college students and the fathers are different, making direct comparison of these findings difficult. However, the findings related to prepared and unprepared fathers and state anxiety could indicate several possibilities similar to those explained for the sample mothers (see section 13.1.2).

It could be that the data generation tool, the STAI, is an unreliable measure of state anxiety with the fathers. No state anxiety data with which to compare the fathers' total state anxiety scores could be located in other studies of fathers whose babies had been admitted to NNU. As discussed in section 13.1.2, the STAI is reported as a reliable tool (Spielberger et al 1983), but its reliability with postnatal mothers is in

some doubt (see section 15.4 and 17.2). There appears to be no evidence available to determine its reliability with postnatal fathers.

As with the mothers, the situation of the admission of a baby to NNU can be a crisis (Caplan et al 1965), although none of the fathers used this term (see section 14.1.1.2). It could therefore be suggested that the unprepared fathers did not perceive the situation of having their baby admitted to NNU as particularly anxiety-provoking and prepared fathers perceived the situation as only slightly more stressful than normal. The fathers' perceptions of the potentially anxiety-provoking situation of having their baby admitted to the NNU are discussed further in chapter 14 (see section 14.1.1).

The state anxiety scores of prepared and unprepared fathers were sub-divided according to Spielberger et al's (1983) divisions, as described in section 13.1.1.1 (see table 13.18).

Table 13.18

Number (%) of prepared and unprepared fathers in each level of state anxiety, as defined by Spielberger et al (1983)

Levels of anxiety	Number (%) of prepared fathers	Number (%) of unprepared fathers	Total (%)
Low anxiety 20-39 (%)	2 (9)	8 (33)	10 (42)
Moderate anxiety 40-59 (%)	8 (33)	4 (17)	12 (50)
Severe anxiety 60-80 (%)	1 (4)	1 (4)	2 (8)
Total (%)	11 (46)	13 (54)	24

(χ^2 =4.8 df = 2; ns)

The majority of fathers, 12 (50%), were in the moderate anxiety range, with more prepared fathers, eight (33%), in this range than unprepared fathers. More unprepared fathers, eight (33%), were in the low state anxiety range. There was one (4%) prepared and one (4%) unprepared father in the level of state anxiety that was defined as severe. While a chi-square test revealed no significant difference between

the proportions of fathers in each category ($\chi^2 = 4.8$ df = 2; ns), the level of probability is nearing significance (p=0.09), suggesting that the differences may not have been entirely due to chance (see table 13.18).

13.2.2.2 Fathers with different types of preparation and state anxiety scores

The seven fathers with previous experience had a mean state anxiety score of 43.57 (SD 5.29), slightly higher than that of the 17 fathers with no previous experience, 42 (SD 14.28). An independent samples t-test indicated there was no significant difference between these scores (t = 0.28 df = 22; ns) (see table 13.19).

The eight fathers given prenatal information had a mean state anxiety score of 47.63 (SD 13.10), slightly higher than that of the 16 fathers given no prenatal information, 39.87 (SD 11.32). An independent samples t-test indicated there was no significant difference between these scores (t = 1.5 df = 22; ns) (see table 13.19).

Table 13.19

Mean state anxiety scores (SD) of fathers with previous experience or not, and given prenatal information or not

	Fathers with previous experience n = 7	Fathers with no previous experience n = 17	Fathers given prenatal information n = 8	Fathers not given prenatal information n = 16
Mean state anxiety scores (SD)	43.57 (5.29)	42 (14.28)	47.63 (13.10)	39.87 (11.32)
	t = 0.28 df = 22; ns		*t = 1.5 df = 22; ns*	

A one sample t-test indicated that there was no significant difference in mean state anxiety scores between fathers with previous experience and fathers given prenatal information (t = 2.03 df = 6; ns). A one-sample t-test indicated that there was no

significant difference between the mean state anxiety scores of fathers with no previous experience, 42, and those given no prenatal information, 39.87 (t = 0.62 df = 16; ns).

13.2.2.3 Holding baby prior to participation and fathers' state anxiety scores

An independent samples t-test indicated that the 12 fathers who had not held their baby prior to participation had a significantly higher mean state anxiety score, 47.67 (SD 12.98), than the 12 fathers who had held their baby prior to participation, 37.25 (SD 9.24), (t = 2.27 df = 22; p = <0.05) (see table 13.20).

Table 13.20

Mean state anxiety scores (SD) of fathers who had held their baby or not prior to participation

Fathers' mean state anxiety scores (SD)	
Held baby n = 12	Not held baby n = 12
37.25 (9.24)	47.67(12.98)
t = 2.27 df = 22; p = <0.05	

There were 11 prepared fathers, of whom 3 had held their baby prior to participation and 8 had not. An independent samples t-test indicated that there was no difference between the mean state anxiety scores of the prepared fathers who had held their baby, 46 (SD 4.36) and the prepared fathers who had not held their baby, 45.38 (SD 13.96) (t = 0.07 df = 9; ns) (see table 13.21).

There were 13 unprepared fathers, of whom 9 had held their baby prior to participation and 4 had not. An independent samples t-test indicated that the mean state anxiety score of the unprepared fathers who had held their baby, 34.33 (SD 8.62) was very significantly lower than that of the unprepared fathers who had not held their baby, 52.25 (SD 11.03) (t = 3.19 df =11; p = <0.01) (see table 13.21).

Table 13.21

Mean state anxiety scores (SD) of prepared and unprepared fathers, who had held or not held their baby prior to participation

	Prepared fathers n = 11		Unprepared fathers n = 13	
	Held baby n = 3	Not held baby n = 8	Held baby n = 9	Not held baby n = 4
Mean state anxiety scores (SD)	46 (4.36)	45.38 (13.96)	34.33 (8.62)	52.25 (11.03)
	t = 0.07 df = 9; ns		*t = 3.19 df = 11; p = <0.01*	

A one sample t-test indicated that prepared fathers who had held their baby prior to participation had a significantly higher mean state anxiety score, 46, than that of the unprepared fathers who had held their baby, 34.33 (t – 4.64 df = 2; p = <0.05).

There were seven fathers with previous experience, two had held their baby prior to participation and had a mean state anxiety score of 43.5 (SD 0.71). There were five fathers with previous experience who had not held their baby, and their mean state anxiety score was 43.6 (SD 6.47). An independent samples t-test indicated that there was no significant difference between these mean state anxiety scores (t = 0.02 df = 5; ns) (see table 13.22).

There were 17 fathers with no previous experience, 10 had held their baby prior to participation had a mean state anxiety score of 36 (SD 9.68). There were seven fathers who had not held their baby, and their mean state anxiety score was 50.57 (SD 16.05). An independent samples t-test indicated that fathers with no previous experience who had held their baby had a significantly lower mean state anxiety score than those fathers with no previous experience who had not held their baby (t = 2.34 df = 15; p = < 0.05) (see table 13.22).

Table 13.22

Mean state anxiety scores (SD) of fathers with previous experience or not, who had held or not held their baby prior to participation

	Fathers with previous experience n = 7		Fathers with no previous experience n = 17	
	Held baby n = 2	Not held baby n = 5	Held baby n = 10	Not held baby n = 7
Mean state anxiety scores (SD)	43.5 (0.71)	43.6 (6.47)	36 (9.68)	50.57 (16.05)
	t = 0.02 df = 5; ns		*t = 2.34 df = 15; p = < 0.05*	

A one sample t-test indicated that the mean state anxiety score for fathers with previous experience who had held their baby, 43.5, was significantly higher than that of fathers with no experience who had held their baby, 36 (t = 15 df = 1; p = <0.05).

There were eight fathers given prenatal information, one had held his baby prior to participation and had a mean state anxiety score of 51. There were seven fathers given prenatal information who had not held their baby, and their mean state anxiety score was 47.14 (SD 14.08). An independent samples t-test indicated that there was no significant difference between these mean state anxiety scores (t = 0.26 df = 6; ns) (see table 13.23).

There were 16 fathers who had not been given prenatal information, 11 had held their baby prior to participation and had a mean state anxiety score of 36 (SD 8.56). There were 5 fathers who had not been given prenatal information, nor had held their baby. Their mean state anxiety score was 48.4 (SD 12.86). An independent samples t-test indicated that fathers given no prenatal information who had held their baby had a significantly lower mean state anxiety score than fathers given no prenatal information who had not held their baby (t = 2.31 df = 14; p = <0.05) (see table 13.23).

Table 13.23

Mean state anxiety scores (SD) of fathers given prenatal information or not, who had held or not held their baby prior to participation

	Fathers given prenatal information n = 8		Fathers not given prenatal information n = 16	
	Held baby n = 1	Not held baby n = 7	Held baby n = 11	Not held baby n = 5
Mean state anxiety scores (SD)	51	47.14 (14.08)	36 (8.56)	48.4 (12.86)
	t = 0.26 df = 6; ns		*t = 2.31 df = 14; p = <0.05*	

A one sample t-test indicated that fathers who were given no prenatal information, but had held their baby, had very significantly lower mean state anxiety score, 36, than fathers given prenatal information who had held their baby, 51 ($t = 5.82$ $df = 10$; $p = <0.001$).

13.1.2.4 Time of the fathers' participation and state anxiety scores

Fathers participated across the range of time slots (see section 12.3.2.2). To facilitate comparison between fathers who participated early in their baby's stay and those who participated later in their baby's stay, the data on times of participation were recoded into two categories, participated within 48 hours and participated after 49 hours.

Table 13.24

Mean state anxiety scores (SD) of fathers who participated within 48 hours of their baby's admission and after 49 hours of their baby's admission

Fathers' mean state anxiety scores (SD)	
participated within 48 hours n = 3	participated after 49 hours n = 21
52.67 (2.52)	41(12.39)
t = 1.6 df = 22; ns	

There were no significant differences between the mean state anxiety scores of fathers regardless of whether they participated early in their baby or later in their baby's stay (t = 1.6 df = 22; ns) (see table 13.24).

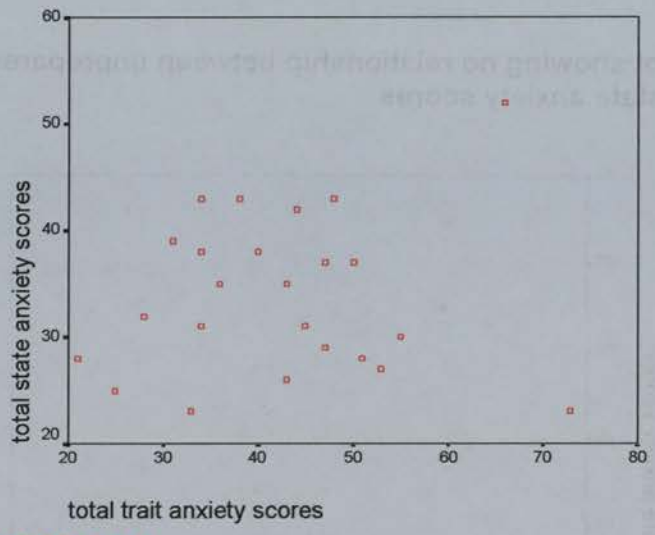
13.2.3 Relationships between fathers' trait and state anxiety scores

13.2.3.1 Correlation between trait and state anxiety scores

Spielberger et al (1983) found that trait anxiety had a positive correlation with state anxiety, therefore it was relevant to establish the nature of any relationship between the fathers' trait and state anxiety scores.

Figure 13.8

Scatterplot showing no relationship between the fathers' total trait and state anxiety scores



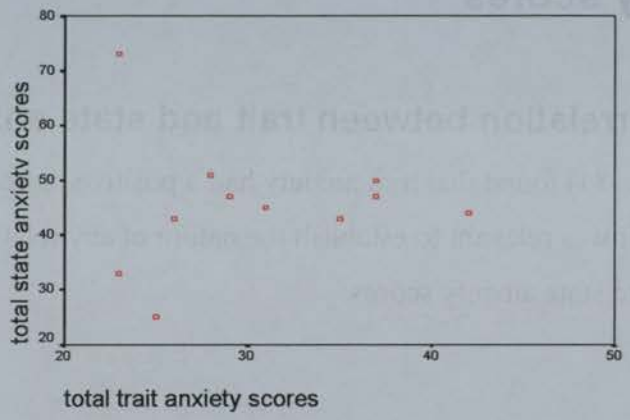
(r = 0.094; ns)

A scatterplot (see figure 13.8) suggested no relationship between the total trait and state anxiety scores of the fathers and this was confirmed by Pearson's test of correlation (r = 0.094; ns). Therefore the father's level of anxiety when his baby was

admitted to the NNU was independent of his usual level of anxiety. This finding contradicted the expected relationship proposed by Spielberger et al (1983).

Figure 13.9

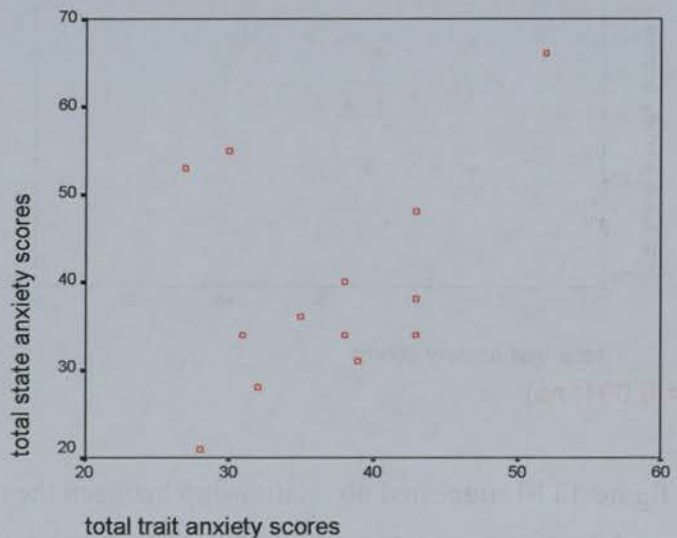
Scatterplot showing no relationship between prepared fathers' total trait and state anxiety scores



(r = 0.008; ns)

Figure 13.10

Scatterplot showing no relationship between unprepared fathers' total trait and state anxiety scores



(r = 0.38; ns)

To assess whether there were any relationships between the total trait and state anxiety scores for prepared and unprepared fathers, these scores were explored in more detail. Pearson's test for correlation was used and showed no significant differences (prepared fathers $r = 0.008$; ns, unprepared fathers $r = 0.38$; ns). Scatterplots show the lack of relationships between the total trait and state anxiety scores (see figures 13.9 and 13.10) for these sub-groups of fathers.

Therefore the fathers' level of trait anxiety was independent of the level of state anxiety they reported when their baby was admitted to the NNU, contradicting the positive correlation Spielberger et al (1983) predicted. This finding is similar to that for unprepared mothers (see section 13.1.3.1). Taking the small sample size into account, reasons for the findings were speculated.

Perhaps these men did not perceive the admission of their baby to the NNU as anxiety-provoking, therefore their level of anxiety did not rise as would be expected had they perceived the situation as anxiety-provoking (Spielberger et al 1983).

Alternatively they may have perceived the situation as extremely anxiety-provoking, so much so that the situation was almost a crisis for them. With this perception, some of the fathers may have used the coping mechanism of denial (Kubler-Ross 1969, Parkes 1972). By blocking the seriousness of the situation and therefore their feelings, they could cope with the situation. Denial of feelings in this way may have affected the fathers' completion of the STAI and led to the aberrant findings.

13.2.3.2 Differences between trait and state anxiety scores

In order to explore the relationship of trait and state anxiety scores further, the difference between the individual scores was calculated. For the purpose of the 'study', a difference was deemed to exist if the state anxiety score varied by more than 10 points from the trait anxiety score (see section 8.2).

The expected difference was that the state anxiety score would be more than 10 points above the trait anxiety score, as the fathers were in a potentially anxiety-

provoking situation/crisis. Only 9 (38%) fathers demonstrated this expected difference in their anxiety scores, i.e. they were more anxious than usual.

However the largest number of fathers, 15 (63%), had state anxiety scores that were within 10 points of their trait scores, i.e. they were no more or less anxious than they usually were (see table 13.25). No fathers were less anxious than usual, in that none had a state score of more than 10 points less than the trait score.

Of the 11 fathers who were prepared, five were no more or less anxious than they usually were and six were more anxious than usual (see table 13.25).

Table 13.25

Number (%) of prepared and unprepared fathers whose state anxiety score was higher than (an increase of more than 10 points above) or equal to (within 10 points of) the trait anxiety score

	Number (%) of prepared fathers	Number (%) of unprepared fathers	Total (%)
State anxiety score higher than the trait anxiety score (increase of more than 10 points)	6 (25)	3 (12)	9 (37)
State anxiety score within 10 points of trait anxiety score	5 (21)	10 (42)	15 (63)
Total (%)	11 (46)	13 (54)	24

(χ^2 = 2.58 df = 1; ns).

Of those 13 fathers who were unprepared, three were more anxious than usual. The remaining 10 unprepared fathers were no more or less anxious than usual (see table 13.25).

Therefore while nine (37%) fathers were more anxious than usual, unexpectedly the majority of fathers 15 (63%) were no more anxious than usual. It was important to consider the possible reasons for these findings. For the five prepared fathers with a

state score within 10 points of their trait score, their preparation might have been related to their perception of their situation as not being anxiety-provoking. This reasoning would not apply to the 10 unprepared fathers with a state score within 10 points of their trait score. An alternative explanation would be that, regardless of any preparation, none of these 15 fathers perceived the situation as anxiety-provoking, resulting in their state anxiety score being within 10 points of their trait anxiety score.

Alternatively, these 15 fathers could have perceived the situation as so anxiety-provoking that the only way to cope with it at that time was to deny the situation and their feelings (Kubler-Ross 1969, Parkes 1972), resulting in their state anxiety score being within 10 points of their trait anxiety score.

While these possible reasons might have affected how the fathers responded, it is also important to note that chi-square testing revealed no significant difference between the proportions of the fathers in each category ($\chi^2 = 2.58$ df = 1; ns).

13.3 Comparisons between mothers and fathers, and trait and state anxiety scores

Although the numbers in the parents' samples varied, the proportions of each group who were prepared and unprepared were similar, therefore broad comparisons were considered appropriate to examine (see table 13.26).

The prepared fathers had the lowest mean trait anxiety score and the narrowest variation in scores, 30.54 (SD6.39) (see table 13.26). The prepared mothers had the highest mean trait anxiety score as well as the widest variation in scores, 37.14 (SD 9.2). A one sample t-test indicated that the prepared mothers' mean trait anxiety score, 37.14, was significantly higher than the prepared fathers score, 30.54 (t = 3.86 df = 28; p=<0.01) and the unprepared mothers' mean trait anxiety score, 34.34, was significantly lower than the unprepared fathers' score, 36.84 (t = 2.22 df = 34;

p=<0.05). Therefore prepared mothers were usually much more anxious than prepared fathers and unprepared mothers were usually much less anxious than unprepared fathers.

Table 13.26

Mean trait anxiety scores (SD) for mothers' and fathers' samples and the prepared and unprepared sub-groups

Mean trait anxiety scores (SD)					
Mothers' sample n=64	Fathers' sample n = 24	Sub-groups of mothers and fathers			
		Prepared mothers n = 29	Unprepared mothers n = 35	Prepared fathers n =11	Unprepared fathers n = 13
35.6 (7.98)	33.96 (7.46)	37.14 (9.2)	34.34 (6.66)	30.54 (6.39)	36.84 (7.26)

Using Spielberger et al's (1983) definitions (see section 13.1.1), comparisons were made between the proportions of prepared and unprepared parents in the low, moderate and severe trait anxiety categories. Overall, the greatest proportion of parents was in the low trait anxiety category, 74%, with only 1% of parents in the severe anxiety category (see table 13.27).

Table 13.27

Number (%) of prepared and unprepared mothers and fathers in each level of trait anxiety, as defined by Spielberger et al (1983)

Level of anxiety	Number (%) of prepared mothers	Number (%) of prepared fathers	Number (%) of unprepared mothers	Number (%) of unprepared fathers	Total (%)
Low anxiety 20-39	19 (22)	10 (11)	27 (31)	9 (10)	65 (74)
Moderate anxiety 40-59	9 (10)	1 (1)	8 (9)	4 (5)	22 (25)
Severe anxiety 60-80	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)
Total (%)	29 (33)	11 (12)	35 (40)	13 (15)	88

It was outwith the remit of the 'study' to make comparisons between the 24 fathers and their individual partners' mean trait anxiety scores, although this could be the focus of future work. It would be interesting to determine the effects on relationships, if any, if partners had different trait anxiety levels.

There was a range of mean state anxiety scores for the sub-groups of prepared and unprepared parents (see table 13.28). The unprepared fathers had the lowest mean state anxiety score, 39.85, while the prepared fathers had the highest mean state anxiety score, 45.55. The unprepared mothers had the widest variation in scores, SD 15.06, while the prepared mothers had the narrowest variation in scores, SD11.09. A one sample t-test indicated that there was no significant difference between the prepared mothers' and fathers' mean state anxiety scores ($t = 0.609$ $df = 10$; ns). A one sample t-test indicated that there was no significant difference between the unprepared mothers' and fathers' mean state anxiety scores ($t = 1.17$ $df = 12$; ns).

Table 13.28

Mean state anxiety scores (SD) for mothers' and fathers' samples and the prepared and unprepared sub-groups

Mean state anxiety scores (SD)					
Mothers' sample n=64	Fathers' sample n = 24	Sub-groups of mothers and fathers			
		Prepared mothers n=29	Unprepared mothers n = 35	Prepared fathers n= 11	Unprepared fathers n = 13
43.65 (13.31)	42.45 (12.24)	43.37 (11.09)	43.88 (15.06)	45.55 (11.84)	39.85 (12.41)

It was outwith the remit of the 'study' to make comparisons between the 24 fathers and their individual partners' mean state anxiety scores, although this could be the focus of future research. It would be interesting to determine the effects on relationships and coping with potentially anxiety-provoking situations, if any, if partners had different state anxiety levels.

Using Spielberger et al's (1983) definitions (see section 13.1.1.1), comparisons were made between the proportions of prepared and unprepared parents in the low, moderate and severe state anxiety categories. The greatest number of parents was in the moderate anxiety category, 40 (45%) (see table 13.29). This demonstrated the increase in anxiety parents experienced when exposed to an anxiety-provoking situation/crisis. There were also more parents in the severe anxiety category, 11 (13%), compared with the number in the severe trait anxiety category, 1 (1%), demonstrating that for some parents, the admission of their baby to the NNU was very anxiety-provoking (see table 13.29). However 37 (42%) of parents were in the low anxiety category, suggesting their experience did not provoke anxiety for them.

Table 13.29

Number (%) of prepared and unprepared mothers and fathers in each level of state anxiety, as defined by Spielberger et al (1983)

Levels of anxiety	Number (%) of prepared mothers	Number (%) of prepared fathers	Number (%) of unprepared mothers	Number (%) of unprepared fathers	Total (%)
Low anxiety 20-39 (%)	11 (13)	2 (2)	16 (18)	8 (9)	37 (42)
Moderate anxiety 40-59 (%)	16 (18)	8 (9)	12 (13)	4 (5)	40 (45)
Severe anxiety 60-80 (%)	2 (2)	1 (1)	7 (8)	1 (1)	11 (13)
Total (%)	29 (33)	11 (13)	35 (39)	13 (15)	88

In response to the admission of their baby to the NNU, the majority of parents, 49 (56%), were no more anxious than they usually were (see table 13.30). This finding was contrary to the expected increase in anxiety that Spielberger et al (1983) proposed. Of the parents who were more anxious than usual, 15 unprepared mothers formed the largest proportion. No fathers were less anxious than usual while two prepared and two unprepared mothers were.

Table 13.30

Number (%) of prepared and unprepared mothers and fathers whose state anxiety score was equal to (within 10 points of), was higher than (increase of more than 10 points above) and lower than (decrease of more than 10 points below) the trait anxiety score

	Number (%) of prepared mothers	Number (%) of prepared fathers	Number (%) of unprepared mothers	Number (%) of unprepared fathers	Total (%)
State anxiety score higher than the trait anxiety score (increase of more than 10 points)	11 (13)	6 (7)	15 (17)	3 (3)	35 (40)
State anxiety score lower than the trait anxiety score (decrease of more than 10 points)	2 (2)	0 (0)	2 (2)	0 (0)	4 (4)
State anxiety score within 10 points of trait anxiety score	16 (18)	5 (5)	18 (20)	10 (12)	49 (56)
Total (%)	29 (33)	11 (12)	35 (39)	13 (15)	88

There was a range of mean state anxiety scores for parents prepared in different ways. Fathers not given prenatal information had the lowest mean state anxiety score, 39.87, and fathers given prenatal information had the highest score, 47.63 (see table 13.31).

Table 13.31

Mean state anxiety scores (SD) for mothers' and fathers' samples and the prepared and unprepared sub-groups

Mean state anxiety scores (SD)							
Mothers				Fathers			
Previous experience		Prenatal information		Previous experience		Prenatal information	
yes	no	yes	no	yes	no	yes	no
41.63	44.51	47.06	42.33	43.57	42	47.63	39.87

A one sample t-test of the mean state anxiety scores of the mothers and fathers with previous experience indicated no significant difference (t = 0.78 df = 18; ns). A one sample t-test of the mean state anxiety scores of the mothers and fathers with no previous experience indicated no significant difference (t = 1.18 df = 44; ns).

A one sample t-test of the mean state anxiety scores of the mothers and fathers who had received prenatal information indicated no significant difference (t = 0.23 df = 17; ns). A one sample t-test of the mean state anxiety scores of the mothers and fathers with who had received no prenatal information indicated no significant differences (t = 1.18 df = 45; ns).

There was a range of mean state anxiety scores for parents who had held their baby or not prior to participation. Fathers who had held their baby had the lowest mean state anxiety score, 37.25, while mothers who had not held their baby had the highest, 51.33 (see table 13.32).

One sample t-tests indicated that there were no significant differences between the mean state anxiety scores of mothers and fathers who had held their baby prior to participation (t = 0.89 df = 39; ns), or between mothers and fathers who had not held their baby prior to participation (t = 1.72 df = 23; ns).

Table 13.32

Mean state anxiety scores of mothers and fathers who had held their baby or not prior to participation

Mothers' mean state anxiety scores		Fathers' mean state anxiety scores	
Held baby n = 40	Not held baby n = 24	Held baby n = 12	Not held baby n = 12
39.05	51.33	37.25	47.67

There was a range of mean state anxiety scores for mothers and fathers depending on whether they had participated before or after 48 hours of their baby's admission. Fathers who participated after 49 hours had the lowest mean state anxiety score, 41,

and fathers who participated within 48 hours had the highest score, 52.67 (see table 13.33).

Table 13.33

Mean state anxiety scores of mothers and fathers who participated within 48 hours of their baby's admission and after 49 hours of their baby's admission

Mothers' mean state anxiety scores		Fathers' mean state anxiety scores	
participated within 48 hours n = 14	participated after 49 hours n = 21	participated within 48 hours n = 3	participated after 49 hours n = 21
44.79	43.34	52.67	41

A one sample t-test indicated the mean state anxiety score of mothers who participated prior to 48 hours was very significantly lower than that of fathers who participated prior to 48 hours ($t = 3.09$ $df = 13$; $p = <0.01$). A one sample t-test indicated the mean state anxiety score of mothers who participated after 49 hours was not significantly different from that of fathers who participated after 49 hours ($t = 1.16$ $df = 49$; ns).

13.4 Conclusion

The main findings will be summarised in this section in which there are three sub-sections. In the first sub-section there is a summary of the findings related to mothers, in the second a summary of the fathers' findings is given, and in the third sub-section the findings related to the comparison between mothers and fathers are summarised.

13.4.1 Mothers

The mothers' mean trait anxiety scores did not differ significantly from the norm. There was no significant difference between the levels of mean trait anxiety in prepared and unprepared mothers, although the majority had low trait anxiety levels.

There was no significant difference in the levels of mean trait anxiety in mothers prepared in different ways.

There was no significant difference between the levels of mean state anxiety in prepared and unprepared mothers. The majority of the mothers had low and medium state anxiety levels, although a small proportion experienced severe anxiety levels, the majority of whom were unprepared mothers. As expected, the prepared and unprepared mothers had significantly higher mean state anxiety scores than the norm.

There were no significant differences between the mean state anxiety score in mothers who had previous experience and those who had not, or between those who had been given prenatal information or not. Mothers who had received prenatal information had a significantly higher mean state anxiety score than mothers who had previous experience ($p = <0.05$).

There were similar proportions of prepared and unprepared mothers in the medium and low state anxiety categories, with smaller proportions in the severe state anxiety category. Most of the mothers in the severe category were unprepared.

There was a significant positive correlation between the prepared mothers' trait and state anxiety scores ($p=<0.05$). There was no relationship between unprepared mothers' trait and state anxiety scores. Calculation of the difference between state and trait scores, revealed that 41% of mothers were more anxious than they usually were, 53% of mothers were no more anxious than they usually were, and 6% of mothers were less anxious than they usually were. However, these differences were not statistically significant.

Mothers who had not held their baby prior to participation had a very significantly higher mean state anxiety score than mothers who had held their baby prior to participation ($p = <0.001$). Prepared mothers who had held their baby had very

significantly lower mean state anxiety scores than prepared mothers who had not held ($p = <0.001$), and unprepared mothers who had not held ($p = <0.01$). Unprepared mothers who had held their baby had significantly lower mean state anxiety scores than unprepared mothers who had not held ($p = <0.01$).

There were no significant differences in mean state anxiety scores between mothers who had previous experience or not who had held their babies, and mothers given prenatal information or not who had held.

Mothers with previous experience who had held their baby had a very significantly lower mean state anxiety score than mothers with experience who had not held ($p = <0.01$). Mothers with no experience who had held their baby had a very significantly lower mean state anxiety score than mothers with no previous experience who had not held their baby ($p = <0.001$).

Mothers given prenatal information who had held their baby had a very significantly lower mean state anxiety score than mothers given prenatal information who had not held ($p = <0.001$). Mothers given no prenatal information had a significantly lower mean state anxiety score than mothers given no prenatal information who had not held ($p = <0.05$).

There were no significant differences between the total state anxiety scores of mothers regardless of the time of their participation.

13.4.2 Fathers

There was no significant difference between the fathers' mean trait anxiety score and the norm. Unprepared fathers had a significantly higher mean trait anxiety score than prepared fathers ($p = <0.05$), but there was no significant difference between unprepared fathers' mean trait anxiety score and the norm. Prepared fathers had a significantly lower mean trait anxiety score than the norm ($p = <0.05$).

The majority of all fathers had low trait anxiety levels, although there was no significant difference in the proportions of fathers in each category. There were no significant differences in the levels of mean trait anxiety between fathers prepared in different ways.

There was no significant difference between prepared and unprepared fathers' state anxiety although descriptively the prepared fathers' mean state anxiety score was higher than unprepared fathers. As expected, all fathers and prepared fathers had higher mean state anxiety scores than the norm ($p = <0.05$). Unexpectedly there was no significant difference between unprepared fathers' mean state anxiety score and the norm. The majority of the fathers had moderate state anxiety levels, although there was no significant difference in the proportions in each category. There were no significant differences in the levels of mean state anxiety in fathers prepared in different ways.

There was no significant correlation between the fathers' trait and state anxiety scores. Calculation of the difference between state and trait scores, revealed that 37% of fathers were more anxious than they usually were, and 63% of fathers were no more anxious than they usually were. However, these differences were not statistically significant.

Fathers who had not held their baby prior to participation had a significantly higher mean state anxiety score than fathers who had held their baby prior to participation ($p = <0.05$). There were no significant differences in mean state anxiety scores between prepared fathers who had held their baby or not, fathers with previous experience who had held their baby or not, and fathers who had been given prenatal information who had held their baby or not.

Unprepared fathers who had held their baby had a significantly lower mean state anxiety score than unprepared fathers who had not held ($p = <0.01$). Prepared fathers

who had held their baby had a significantly higher mean state anxiety score than unprepared fathers who had held ($p = <0.05$).

Fathers with previous experience who had held their baby had a significantly higher mean state anxiety score than fathers with no experience who had held ($p = <0.05$). Fathers with no experience who had held their baby had a significantly lower mean state anxiety score than fathers with no previous experience who had not held their baby ($p = <0.05$).

Fathers given prenatal information who had held their baby had a very significantly higher mean state anxiety score than fathers given no prenatal information who had held ($p = <0.001$). Fathers given no prenatal information who had held their baby had a significantly lower mean state anxiety score than fathers given no prenatal information who had not held ($p = <0.05$).

There were no significant differences between the total state anxiety scores of fathers regardless of the time of the fathers' participation.

13.4.3 Mothers and fathers

The majority of the mothers and fathers had low trait anxiety scores. However, the prepared mothers' mean trait anxiety score was significantly higher ($p = <0.01$) than that of the prepared fathers, and the unprepared mothers' mean trait anxiety score was significantly lower than that of the unprepared fathers ($p = <0.05$).

There was no significant difference between the prepared and unprepared parents' mean state anxiety scores. Descriptively, unprepared fathers had the lowest mean state anxiety score, while the prepared fathers had the highest. More unprepared mothers experienced severe levels of state anxiety than other sub-groups of parents. The majority of parents experienced moderate levels of state anxiety.

The majority of parents were more anxious than they usually were when experiencing a baby being admitted to the NNU. No fathers were less anxious than usual, but two prepared and two unprepared mothers were less anxious than usual. More prepared parents were more anxious than they usually were when compared with unprepared parents.

There were no significant differences between the mean state anxiety scores of parents prepared in different ways. Descriptively fathers not given prenatal information had the lowest mean state anxiety score and fathers given prenatal information had the highest score.

There were no significant differences between the mean state anxiety scores of mothers and fathers who had held their baby prior to participation or between the mean state anxiety scores of mothers and fathers who had not held their baby prior to participation.

Mothers who participated prior to 48 hours had a very significantly lower mean state anxiety score than fathers who participated prior to 48 hours ($p = <0.01$). However there was no significant difference in the mean state anxiety scores of mothers and fathers who participated after 49 hours.

Findings

Chapter 14

Findings from the qualitative data analysis related to parents

Introduction

The findings of the analysis of the qualitative data related to parents and their babies are presented in this chapter. All of the participating mothers and 14 of the participating fathers engaged in conversations with the 'researcher', and all of the five interviews were held with mothers. Therefore in the presentation of the findings, the examples used to illustrate the interpretation offered are mainly from the mothers. Exact words are quoted, therefore allowances should be made by the reader for any incorrect grammar, slang words or local dialects used.

The data that were analysed included the transcribed verbal data from the interviews with mothers and data from the researcher's field notes on the conversations held with parents as well as those interpreting attitudes, affect and non-verbal behaviour of the parents. Additional data from the assessments made by staff of participating parents were also analysed. Referral to Appendix 19 may also assist the reader of this chapter.

Using data from several sources, a form of triangulation, gives enhanced interpretability, therefore a more comprehensive understanding of the parents' feelings and experiences was developed (Robson 1993). However in this chapter, the analysis of the qualitative data offered by parents in conversation and interview, supplemented by interpretations from field notes, is presented. The results of the analysis of other data are presented in chapters 12, 13 and 15.

The explanation of how qualitative data management was undertaken is given in section 10.2.2, therefore will not be repeated in this chapter. However, as a brief reminder, a process of constant comparison analysis resulted in initial codings being condensed until the four main categories were finalised. These categories form the

structure for this chapter, with each providing a section heading. The main categories are 'About Admission to NNU', 'About Preparation for NNU Care', 'About Early Parenting', and 'About Staff'. Within each of these categories, sub-categories were identified, and these sub-categories comprise the sub-sections. A diagrammatic representation of the categories and sub-categories is given in table 14.1.

Table 14.1

Summary of categories and sub-categories from the qualitative analysis of parents' data

Category	Sub-category
About admission to NNU	Not anxious contrasting with anxious
	Disappointment contrasting with reluctant resignation
About prenatal preparation for NNU care	Missed opportunities
	Grateful acceptance
	Fear
	Irrelevance
	Limited benefit
	Ironic ideal
About early parenting	Thwarted first visit
	Frustrating delays
	Hesitant caring
	Need to hold
About staff	Information, prenatal and postnatal
	NNU staff are good, but ...

As these categories and sub-categories are discussed, illustrative quotations from the participants are used. Each quotation is attributed to a participant and the participant's preparedness is included in brackets after their identification. This will help to focus on the parents' preparation for NNU care throughout. The categories of preparedness are 'unprepared', 'information', 'experience' or, if both information and experience have been experienced, 'prepared'.

14.1 About admission to NNU

Analysis of the data from parents indicated they held definite feelings about their baby's admission to NNU. Further analysis revealed variations in feelings between parents and conflicting emotions for individual parents and the two main sub-categories of 'Not anxious contrasting with anxious' and 'Disappointment contrasting with reluctant resignation' were clarified. These sub-categories are discussed below.

14.1.1 Not anxious contrasting with anxious

Introduction

The main aim of the 'study' was to explore the anxiety experienced by prepared and unprepared parents during the potential anxiety-provoking/crisis of having a baby admitted to NNU. Anxiety is an emotion associated with negative stress (see section 2.3.1), stimulated by negative stressors. The admission of a baby to the NNU can be negatively stressful for parents and, based on the findings of other studies (see section 3.3), the expectation was that anxiety would be experienced by the parents participating in the 'study'. Therefore it was important to explore the qualitative data from parents for evidence of anxiety or not. The data revealed there were contrasting feelings reported by parents and these were condensed to the sub-category of 'not anxious contrasting with anxious'.

Words suggesting the sub-category, included "concern", "anxious", "worried", "scared", "upset", "brilliant outcome", "calm", "relaxed", "happy", "pleased", and "glad". It was noted that no parents used 'crisis' to describe how they were feeling, in contrast to the expectations of Caplan et al (1965).

Qualitative analysis revealed a variation in parental anxiety within the sample and between individual baby's parents. This finding supported Lazarus (1966) who

suggested that stressors could be perceived differently by individuals. For some, the stressors were very negatively stressful, yet for others the stressors were not perceived as stressful at all. Lazarus (1966) suggested that such variations were similar to the individual's perceptions of events that were hazardous or not, and could potentially lead to crisis or not. Therefore the parental anxiety could indicate whether the parents found the admission of their baby to NNU stressful or not and suggest whether they were in crisis or not.

Parents also indicated that factors other than simply the admission were associated with their anxiety. These factors included whether they expected their baby to be admitted, the events around the admission, whether they felt they had possibly influenced the admission, and for some, the effect of previous experiences.

14.1.1.1 Not Anxious

Some parents verbally appeared to indicate that they were not anxious and had positive feelings about the baby's admission to NNU. One mother, m2 (information), conveys these types of feelings. Having expected to give birth well before term, giving birth to a 34 week gestation baby who was relatively well was a relief to her. She was,

"...so relieved that...(her baby)...looked so well...(and was)...delighted with her" (m2, information).

With a traumatic obstetric history and previous experience of NNU, m57 (experience), felt that giving birth to a live 30 week gestation baby was a

"...brilliant outcome..."(m57, experience).

For these parents the admission of their baby to NNU did not appear to be perceived as a negatively stressful event, and did not appear to provoke anxiety. Preparation for potential anxiety-provoking events/crisis is suggested to moderate the anxiety when the situation arises (Caplan et al 1965, NAWCH 1990, Oetker-Black 1993, Thornton et al 1995). This may have been the case for these prepared mothers, but the influence of their preparation was unclear.

14.1.1.2 Contrasting with Anxious

When the admission to NNU was unexpected, some parents expressed initial surprise. Some time later, when they realised that admission meant that there was a problem with their baby, their feelings changed to anxiety. After her initial surprise, m59 (unprepared), indicated that she became worried when she realised that the condition of her twins was much poorer than she had expected. Therefore the perception of the event as negatively stressful only occurred after the extent of the event was fully understood, a finding that supports the view of Caplan (1960).

For some parents, both prepared and unprepared, this understanding occurred as soon as they knew the baby was to be admitted. These parents openly acknowledged that they were immediately anxious or very anxious. In their own words, it was clear that m62 (prepared), was "anxious", m46 (unprepared) was "worried", m52 (unprepared) was "really upset" and m1 (unprepared) was "confused and upset" when each knew their baby was to be admitted. One mother, m16 (prepared), felt so anxious about the admission of her baby to NNU, that she commented that it was the,

"...worst moment of my life..."(m16, prepared).

When parents completed the first stage of data generation together, sometimes both indicated they had similar feelings. When talking with m17 and f17 (unprepared), both felt that they were scared and greatly concerned by the condition of their son. However other parents revealed that each felt differently about their experiences. The admission of his son to NNU was something f41 (unprepared) was happy about, whereas when his wife, m41 (information) heard this, tears welled up in her eyes, indicating that she did not share these feelings. One woman, m20 (prepared), was sorry that her baby had required admission to NNU but felt that her partner (prepared) was

"...more worried than he was letting on..." (m20, prepared).

Preparation does not appear to be related to whether the parents have similar or different feelings. The difference in feelings could have implications for a failure of mutual support between parents. This lack of support can be exacerbated if either partner misunderstands the feelings of the other (Aguilera and Messick 1986, Wheatley 1998), as in the situation of m41 (information) and f41 (unprepared).

Other parents, both prepared and unprepared, indicated there were certain aspects that were of particular worry to them. One couple, m54 and f54 (both unprepared), were scared by the resuscitative procedures. The baby's resuscitation was also of concern to m38 (experience) who was

> "...very worried about his resuscitation..." (m38, experience).

The main concern for m3 (unprepared) was that she had given her baby the infection that resulted in his admission.

By concentrating in these ways on part of the full situation, these individuals may be attempting to protect themselves from the overwhelming impact of the full situation, thus trying to maintain some equilibrium and prevent a crisis (Aguilera and Messick 1986, Kubler-Ross 1969, Parkes 1972).

For some prepared and unprepared parents, the anxiety they experienced when their baby was admitted dissipated when the baby's condition improved and/or when the prognosis was more hopeful than initially. One mother, m29 (unprepared), was no longer as worried about her son's survival as she had been at first. This was similar to m15 (experience), who had,

> "...thought the worst...(initially, but was)...less concerned now that the brain scan...(was normal)..."(m15, experience).

This lessening of anxiety suggests that parents, who had at first been in a state of disequilibrium, were reverting to a state of equilibrium. This is possibly because, as their baby's condition improved, it did not present as much of a hazard to them. Caplan (1960) suggested this is a functional way of coping with stressors, in that if

equilibrium is achieved, a crisis is averted. There is no evidence that preparation influences this change.

Other prepared and unprepared parents found that although the depth of their anxiety diminished after admission, there were aspects about their baby's condition that meant that their concerns were not allayed completely. While m56 (information), had been very concerned initially, she found this lessened as condition of the twins stabilised but she was still very worried about how small they were.

For m52 (unprepared), although her daughter had,

"...been cleared to go back to the ward...(she was still)...concerned that the cause of the dusky spell had not been...(established)..." (m52, unprepared).

This response may indicate a persisting state of disequilibrium where the improvement in the baby's condition has not lessened the effect of the situation and the parent may be more likely to progress into a crisis (Caplan 1960). Nevertheless, there was no indication that m52 was in crisis.

Some parents had personal experience of a previous baby requiring admission to the NNU. This was the case for m33 and f33 (experience). They were very frightened by the obstetric emergency with the latest pregnancy and the hectic sequence of events that followed. They felt they had not been kept informed about events and, had they not had previous experience, they,

"...would've been very frightened..." (m33 with agreement of f33, experience).

In this type of situation, it appears as if the previous experience has afforded parents some additional problem-solving skills, that they have been able to use to reduce the effect of the negative stressors in a subsequent situation. The anxiety response still occurs but the anxiety is less. This may indicate the parents are utilising their problem-solving repertoire to lessen the disequilibrium possibly sufficiently to avert a crisis (Caplan 1960).

Summary

Parents had obvious feelings about their baby's admission to NNU. Some did not express anxiety about the admission, viewing it as a positive event. However the majority of parents did express anxiety about the admission. There were variations in anxiety and the focus of the anxiety. There were few obvious effects of preparation, except that previous experience appeared to help moderate the anxiety some parents experienced.

14.1.2 Disappointment contrasting with reluctant resignation

14.1.2.1 Disappointment

The word "disappointment" occurred often during the conversations and interviews. However the parents used other words and phrases to express their disappointments. These were initially coded separately, but as the codes were condensed, the words and phrases that became coded with disappointment included, "missing out", "missed out", "cheated", "distressing", "hadn't done", "frustrated", "not what I/we wanted".

Although they usually used negative phrases, by expressing their disappointments, the parents were clearly indicating what they would have preferred, what they had expected to happen, what they had hoped for during the pregnancy and postnatally. Rather than saying she had expected her baby would be in a cot at the side of her bed, m61 (unprepared) said she,

> "...was disappointed he wasn't beside me..."(m61, unprepared).

Rather than saying that she had expected her baby's birth to be a wonderful event, m28 (unprepared) said she was

> "...missing out on a wonderful event..."(m28, unprepared).

Parents clearly had expectations about what they would be doing with their baby after the birth. They were disappointed when they were unable to meet these

expectations because the baby was in NNU. It was clear that m3 (unprepared) was disappointed because she was

> "... not doing what (she) wanted to...(in relation to her baby)... (and felt she)...could do nothing for him...(in the NNU)" (m3, unprepared).

Following a long period of infertility and assisted reproduction, m39 (prepared) experienced complications in her pregnancy and had given birth at 35 weeks by emergency caesarean section under general anaesthetic. Having looked forward to her pregnancy so much, she felt as if nothing had worked out as she had expected. She was disappointed that she had not seen her son at his birth and indicated that the extent of her disappointment meant that everything,

> "...felt unreal... "(m39, prepared).

Mothers have reported similar feelings of disappointment in previous studies (Harper et al 1976, Jeffcoate et al 1979b, Trause and Kramer 1983).

Few of the parents indicated their expectations or hopes in positive terms. When they were expressed positively, they were usually related to the strong desire to hold the baby or have him with them. One mother, m24 (unprepared), said that she was,

> "...desperate to hold (her baby)..." (m24, unprepared).

Amongst others, m1 (unprepared) and m38 (experience) wanted their babies 'beside' them in the wards, while m42 (prepared) wanted to hold her baby. Holding the baby has long been recognised as an important part of care-giving (Benfield et al 1976), and it was clearly important for the mothers in the 'study'. Further discussion of holding is found in section 14.3.4.

14.1.2.2 Contrasting with reluctant resignation

When disappointments were expressed, both prepared and unprepared parents usually countered these by a rationalisation of the situation in which they found themselves, but this tended to be done with reluctance in their tone.

Many parents used the word "resigned" in conversations with the 'researcher'. However the reluctance with which the resignation was expressed was very evident during the conversations. Shrugs of shoulders, downcast eyes, sighing, eyes filling with tears, quieter tones of voice, were common indications of the parent's reluctance. Typically m20 (prepared) expressed with a sigh that she was

"...resigned to the fact that...(her baby was)...in the unit"(m20, prepared).

Parents used other words, sentiments and phrases to express their resignation. These were initially coded separately, but as the codes were condensed, the words, sentiments and phrases that became coded with resignation included, "happier", "but its OK", "in the right place", "realised that", "understood why".

Both m45 (experience) and m61 (unprepared) indicated that it was,

"...OK that... (the baby)...was in the unit"(m45, experience and m61, unprepared).

The contrast between the disappointment and the resignation that parents experienced was very clear during most of the conversations and interviews. The comments made by m41 (information) were illustrative of this. She was,

"...disappointed things hadn't worked out but...(she was)...pleased that the ...(NNU staff were)...there...(to care for her baby)..."(m41, information).

A mother, m19 (information), commented that because her baby was in the NNU and she was not performing care giving activities as expected, she did not feel her baby was hers, nor did she feel she was a mother. However she countered these feelings with a statement indicating the contrasting feelings of resignation,

"...but he's only upstairs...(and)...he's being well looked after"(m19, information).

The prenatal information and the tour of NNU m19 received appear not to have reduced her disappointments in relation to her altered parental role (Boxall and Whitby 1983, Thornton et al 1984, Griffin et al 1997), but may have helped her resignation about the situation (Caplan et al 1965).

Another mother, m14 (unprepared), also indicated she felt her babies were not hers, yet she was 'grateful' to the staff of NNU for providing the care her babies needed. Despite clearly longing to have their babies with them, some mothers, m48 and m49 (both unprepared) amongst them, felt particularly "useless" in the NNU and this resulted in them not visiting their babies or visiting them for only short times. One mother, m1, had been given information from NNU staff about her baby's admission but still could not understand why her baby was in NNU. As a result she did not want him to be there at all but contrasted this with the fact that she thought the NNU staff were "good". During her interview, m1 (information) commented that

> "...I didn't expect him to be in there because I've had previous babies who've bounced out and been perfectly healthy...they're just normal healthy babies and he doesn't look that different to me...but at the same time he's not well and I don't really understand why that should be..."(m1, information).

With the depth of knowledge about the potential anxiety-provoking nature of admission to NNU, the reluctance with which parents expressed their resignation to their baby's admission was expected. No evidence can be found in previous studies that identifies the reluctant resignation of parents about NNU admission identified in this study. However in a detailed qualitative study by Mander (1999), feelings similar to 'reluctant resignation' were identified in mothers relinquishing their babies for adoption. These mothers, while expressing a desire to keep their babies, acknowledged that relinquishment was a better option for the baby.

Summary

The disappointments about NNU admission that the parents experienced focused on their unfulfilled expectations about pregnancy, birth and their initial care-giving and loving role as parents. Parents usually contrasted their subjective expressions of disappointment with a statement of reluctant resignation about their baby's admission to NNU. They appeared to be convincing themselves and giving themselves reassurance that, despite the negative emotional situation they were experiencing, their baby's physical situation was positive. The influence of preparation on these feelings is unclear.

14.2 About Preparation for NNU Care

The findings of Greig (1998) indicated that most of the midwives surveyed reported that they did offer some preparation of parents for NNU care in the prenatal and/or intranatal period, in the form of information, possibly including a tour of NNU. Previous experience of NNU was considered a type of preparation. Therefore the influence, if any, of parental prenatal information about NNU care and/or previous experience of NNU on parental anxiety was a major focus of the 'study'. The parents were asked about such preparation. Of the 64 mothers and 25 men who participated, 18 (28%) mothers and 9 (36%) men could recall being given information about NNU care, sometimes including a tour of NNU, in the prenatal and/or intranatal period by medical personnel and midwives. There were 19 (30%) mothers and 7 (28%) fathers who had previous experience of NNU. In total 28 (44%) mothers and 12 (48%) fathers were designated as prepared.

Depending on how the questions are phrased, asking parents their views on preparation for NNU care could be viewed as introducing bias. Therefore when possible in the conversations with parents and in the interviews, questions were asked about their views on preparation in relation to themselves and on their views on preparation for NNU care in relation to other parents.

Initial analysis of the qualitative data from all participants was coded into whether prenatal information about NNU care, possibly including a tour of NNU, was given, was wanted, whether it should be given, the nature of the information, and by whom and to whom it should be given. The parents' feelings about previous experience were also elicited. Further data generation and analysis condensed the codes eventually to a main category of, 'About Preparation for NNU Care' and the sub-categories of 'Missed opportunities', 'Grateful acceptance', 'Fear', 'Irrelevance', 'Limited benefit', and 'Ironic ideal' were identified. These sub-categories are discussed below.

14.2.1 Missed opportunities

While some parents were given information either in the prenatal period or during labour, some were given no information about NNU, despite the probability that admission to NNU would be necessary because of maternal or fetal complications. Words and phrases suggesting the sub-category of missed opportunities included, "no time", "no chance", and "no opportunity".

Parents who indicated that they had not been given information, then appeared to make allowance for this. Most indicated that there were valid reasons for them not having been given information. Having arrived in labour at 26 weeks gestation and quickly given birth, m56 (information) concluded that there had been no time for her to be given information. The reason that there was 'no time' was also given by m28 (unprepared) and her husband, because during labour at term, an emergency caesarean section was performed. The allowances parents made for information-giving being omitted were similar to the resignation with which parents appeared to accept their baby's admission to NNU (see section 14.1.2).

However, there were many mothers who were identified as high risk or who had undergone investigations for pregnancy complications who did not receive any information about the possibility of NNU care. This is contrary to expectations (Greig 1998). With a history of an emergency caesarean section with a previous preterm baby, m45 (experience) indicated that in her latest pregnancy, fetal well-being had been of concern and was monitored. However the midwives had not discussed the possibility of the baby requiring NNU admission nor had they given her an opportunity to discuss

> "...what was happening to...(her)..."(m45, experience).

After her son was born, she realised herself that he would require NNU admission, and she seemed comfortable with the fact. When a doctor spoke with her and her husband, she said she

> "...almost dismissed him, saying it would be fine..."(m45, experience).

This statement m45 (experience) thought was misinterpreted by the staff to mean that she was not concerned about her son. However she felt that had staff really appreciated how she felt, they would have understood that she was worried, but knew from previous experience that her son would be well cared for in the NNU. In this case, preparation appears to have helped m45 cope with her experience in a positive way.

For m47 (unprepared), the complications in her pregnancy had required significant multi-professional care, including hospital admission, but no-one had indicated to her

> "...that there might be a problem with the baby...(nor had anyone suggested)...a visit to the unit..."(m47, unprepared).

Despite their disappointments about the missed opportunities, parents appear to have simply accepted the omission.

14.2.2 Grateful acceptance

For the parents who had been given prenatal information about NNU care, there appeared to be a grateful acceptance of whatever they had received. Words suggesting the sub-category of grateful acceptance included ""very helpful", "allayed some of my fears", "a great help", "felt quite prepared" and "not fearful of". There was no indication that parents were made more anxious or frightened by receiving this information. However it should be noted that the parents receiving information knew that the status of the woman and/or the fetus had been categorised as high risk and the likelihood of NNU admission was high.

The nature of the information to parents varied and there did not appear to be a formal list of topics. Parents recalled that the size and appearance of the baby had been discussed, particularly when it was known that the baby was likely to be extremely preterm. The probable sequence of events in the immediate period after the birth was explained for some parents. Having had some experience of NNU, not

personal, such information was given to m20 (prepared) by midwives, obstetricians, and friends and she found it all

"...very helpful..."(m20, prepared).

The equipment that might be used with the baby was explained. A helpful explanation of the equipment was given by the doctor to m41 and her husband, f41 (both information), and therefore, although they were aware of the equipment around their baby, they were

"...not really bothered by it..."(f41, information).

These parents did however find the alarms rather scary, but had got used to them very quickly. They indicated that a prenatal tour of the NNU might have helped familiarise them to what the environment was like. While she knew of NNU from a friend, a tour of NNU had enabled m20 (prepared) to become familiar with the geography of the unit and the equipment so that when she visited,

"...I could concentrate on my daughter..."(m20, prepared).

A tour of the NNU is a preparatory strategy that has been found to be very beneficial for prospective parents (Boxall and Whitby 1983, Stewart 1989, Griffin et al 1997), but was rarely experienced by the participants. When it was experienced, it was also gratefully accepted and acknowledged as being very helpful. The tour of NNU had prepared m49 for the equipment,

"...so these things didn't bother me..." (m49).

During her complicated prenatal period m39 (prepared) had been offered a tour of NNU but delayed it several times. Having had some information about the possible appearance of her baby, potential problems and the equipment that might be required, she clearly expected to be frightened by the NNU. When she eventually felt ready to deal with what she might see, she and her husband toured NNU together. To her surprise, she

"...had not been frightened ...(and the visit) ...did help when I had to go to the unit to visit...(her son)" (m39, prepared)

Information was usually given by midwives and/or medical personnel, although other parents indicated that the experiences of relatives and friends who had babies in NNU and information from the parents' own reading had helped prepare them for their experiences. A friend of m50 (experience) had twins in NNU and she felt this had helped her because she

"...knew what the unit was like and how small and sick babies can be..." (m50, experience).

However m50 (experience) drew some unrealistic conclusions from this. The twins had both recovered, therefore she expected her daughter to also recover although she knew

"...how up and down things can be..." (m50, experience).

Similar unrealistic expectations were clearly in evidence when m20 (prepared) explained the influence a friend's experience of NNU was having on her. One of her friend's twins had died while the other had survived. Appearing to discount the possibility of her own baby dying, m20 (prepared) instead felt confident that her daughter would survive because one of her friend's babies had survived. This unrealistic expectation could also be interpreted as denial, an expected reaction to the birth of a preterm and/or sick baby (Kubler-Ross 1969, Parkes 1972).

While none of the parents received the full complement of topics identified from the literature as appropriate for prenatal preparation (Greig 1998), some mothers designated as high-risk and their partners, and parents of fetuses designated as high-risk had been given information about NNU for which they were grateful. The gratitude was related to the fact that whatever aspects had been discussed prenatally, coping with those aspects postnatally had been easier.

14.2.3 Fear

Unprepared parents usually held the view that that prenatal information about NNU care should not be given and when the data were analysed, it was clear that there

were two principal related reasons for this view. The first reason was the potential of such information to invoke fear in parents and this aspect is reported in this sub-section. The second reason was irrelevance, the focus of sub-section 14.2.4.

Words suggesting the sub-category of fear included, "frighten", "frightened by", "frightening" and "unnecessarily worrying".

The view of childbearing as an uncomplicated physiological process is commonly held by mothers and midwives (Sweet 1988). When this perception completely guides behaviour and care, complications or pathologies associated with childbearing are not discussed unless and until they become apparent (Fleissig 1993, Greig 1998). While relatively rare, many complications or pathologies can lead to morbidity or even mortality for the mother and the baby and so could also be frightening to hear or to think about. Therefore discussions of complications or pathologies would alert parents to factors that could invoke fear and therefore be unnecessarily anxiety-provoking for them apparent (Fleissig 1993, Greig 1998). One mother, m59 (unprepared), said she

"...would have been frightened if someone had talked about the twins being born early..." (m59, unprepared).

Another, m56 (information), thought that had she been given more information than that received at the first prenatal clinic visit, she

"...might have worried more..." (m56, information).

Insightfully, she wished that there was some way of,

"...warning mothers...(about NNUs) ...without frightening them..." (m56, information).

Considering that all the views were expressed by parents whose baby was admitted to NNU, there is clear contrast between the views of fear and the grateful acceptance expressed by parents who had actually experienced prenatal preparation. It is also worthy of note that the parents given preparation usually did not appear to experience fear when the information was given, supporting the findings of Fawcett and Burritt 1985, Hillan 1992a, Freda et al 1993).

14.2.4 Irrelevance

The other reason clearly analysed from the data for not giving information was the likelihood of it being viewed as irrelevant and therefore ignored by parents. Words suggesting the theme of irrelevance included, "not relevant", "didn't apply", "not for me", "not applicable", "wouldn't have taken it in", " not appreciated", "wouldn't have taken it consciously on board".

Parents who indicated that they had seen, read or been given information about NNU care but had ignored it, gave the reason that it was irrelevant to them. Their childbearing had been or currently was uncomplicated, therefore the information did not relate to their circumstances.

Having had one previously uncomplicated pregnancy, m27 (unprepared) thought that information about NNUs,

"...would not have applied to me .....(and she) wouldn't have taken it consciously on board..."(m27, unprepared).

Because none of her previous babies had been admitted to NNU, m60 (unprepared) assumed this would be the case for the current baby. Expressing the irrelevance of prenatal information to her, she said

"...I don't think that it would've been relevant to me during my pregnancy..." (m60, unprepared).

The most extreme aspect of irrelevance expressed by unprepared participants was that nothing could have prepared them for the experience of NNU. The implication of this was that it was unlikely that any preparation would be relevant for other parents. The words of m22, agreed with by f22 (both unprepared), conveyed this feeling most clearly when she said that she was,

"...not sure that anything could've prepared us for what we've gone through the past five days..."(m22, unprepared).

When asked if there was any way in which she or her partner, f47 (both unprepared), could have been prepared for their son's NNU admission, neither could think of

anything. However m47 did indicate that she would have liked to have more information about the main complication of her pregnancy. This suggests a focus on herself that was identified by Caplan et al (1965). When asked about preparation for parenthood classes, despite this being a first pregnancy, m47 had not attended. She indicated that she had read some leaflets about pregnancy but felt the sections on preterm babies and NNU were of no relevance to her and so she had

..."skipped those bits..."(m47, unprepared).

The view that prenatal preparation for NNU care is irrelevant was openly expressed by parents. The belief that pregnancy and childbirth are completely uncomplicated, based on personal experience, appears to predominate.

14.2.5 Limited benefit

While many unprepared parents felt preparation would be frightening or irrelevant, some felt that preparation might have had limited benefit for them and for other parents. Words suggesting the theme of limited benefit included "might have helped me cope", "liked to have seen", "might have been good", "might have liked" and "might have been useful".

Some parents suggested that preparation should not be given to all prospective parents as that would be too frightening but should be given when high-risk status for the mother or fetus had been established.

One mother who held this view was m51 (prepared). She suggested that once it was known that

"...the baby would go to the unit, information would be beneficial..."
(m51, prepared).

For herself, she felt she would have benefited from a tour of the NNU prior to her first baby's admission to NNU.

For m64, the only way in which she felt she could have been prepared would have been a tour of the NNU. Other parents suggested that a tour of the NNU would be a

useful strategy and benefit different parents in different ways. For m8 (unprepared), this might have reduced her awe of the equipment. Had there been sufficient time, m28 and f28 (both unprepared) felt that the NNU tour would have been welcomed.

While indicating that she was unsure of what information about NNU care would be appropriate for mothers in pregnancy, m27 (unprepared) would have liked to have toured the NNU,

"...just to see what it was like..." (m27, unprepared),

but she did not think she would have taken in much more information at that time.

The best person to give the information was suggested by m33 (experience) to be the midwife. The doctor would have more input after the birth. Midwives were the professional most often noted as having given parents prenatal information about NNU care, but the neonatologist was also acknowledged as having given prenatal information (see sections 12.1.5 and 12.3.5).

Some parents felt that preparation had the potential for benefit to them. However this was usually expressed with some doubt indicated by the limited nature of the benefits parents felt they might achieve.

14.2.6 Ironic ideal

In 19 instances parents indicated some experience of NNU. In 10 cases, parents had personally experienced the admission to the NNU of one or more previous babies. While many of these parents acknowledged that they were still worried and upset that another baby required admission, they never-the-less felt such previous experience was good preparation for NNU admission. Words suggesting the sub-category of 'Ironic Ideal' included, "best", "good preparation", "brilliant preparation", "no great fright", and "felt like coming home".

As preparation, previous experience was described by m57 (experience) as

"...the best..."(m57, personal experience).

All the parents were aware of the irony of this ideal preparation, yet appeared to concentrate on the benefits to them. The main benefit to m55 (experience) of having a previous baby in NNU was that she

"...was very much more relaxed..." (m55, experience).

When her son had to be admitted unexpectedly to NNU, m16 (prepared) indicated it was her

"...worst moment..." (m16, prepared).

However she was relieved to find that he was not as ill as her daughter had been. She knew the routine in the NNU and that he was in the right place, so that made her feel comfortable. However on a more negative note, she also knew how ill babies could be, so this made her very anxious as to how her son would progress.

Although she had no experience of this particular NNU, previous paediatric intensive care experience had prepared m38 (experience) for the equipment around her son in the NNU. However she was still very disappointed that he needed NNU care.

During her interview, m40 (prepared) suggested that her previous experience of NNU care had resulted in her being calm and accepting of her daughter's unexpected admission to NNU. While some of this calmness was related to her being born at term rather than preterm, much was related to her past experiences.

"...there was no panic, there was no... you know, why and what, I just said OK fine, we'll see her up there and we'll hear what's happening once we get up there" (m40, prepared).

Both m40 and her husband (prepared) recognised and were recognised by NNU staff. Because their previous baby required intensive care they were familiar with the equipment and the alarms,

"...so there was no, you know, no great fright in that..." (m40, prepared).

Indeed m40 indicated that her husband appeared to fall back into the habit acquired previously of switching off monitor alarms. This was of concern to the NNU staff who did not know them, until their past experience was explained. This mother also knew the system and felt she could question and direct care more knowledgeably, which was beneficial to her self-esteem.

Familiarity with the equipment resulted in m18 (experience) and m51 (prepared) not being frightened by it, allowing m18,

"...to concentrate on her daughter..."(m18, experience).

Knowing the routine and some of the staff was beneficial to m42 (prepared) because when her son was admitted to the NNU, she suggested that,

"...it felt like coming home..." (m42, prepared).

Feeling very much at home was also how m45 (experience) described her experience. She felt she adapted quickly to the unit again and was pleased to recognise and be recognised by NNU staff. This mother perhaps best explained the ironic ideal of previous experience, in that she suggested that having had a baby in the NNU was,

"...brilliant preparation for...(her son's)...admission..." (m45, experience).

It was evident that parents did feel their previous experience of NNU was of great benefit to them when a subsequent baby required admission. While the benefits did not include complete absence of anxiety, the depth and length of the anxiety experienced appeared to be moderated sufficiently that the parents were aware of it.

14.3 About early parenting

Klaus and Kennell (1976) summarised a classic series of interactions that parents typically have with their baby immediately after birth and in the early postnatal period. Eye-to-eye contact (en-face) and touch in the form of holding are the first interactions and are typically achieved in the sensitive period after birth when the mother and her baby are both in an aroused state. Whilst holding their baby, parents

will begin to explore in more detail their baby, starting with the extreme periphery and working towards the trunk, using first the finger tips and then the palms for exploration.

When the baby has to be resuscitated or is taken from the parents immediately after birth for admission to the NNU, this normal progressive pattern of interaction can be disrupted. Klaus and Kennell (1976) initially proposed that separation of the baby from his parents in the immediate sensitive period after birth was more likely to result in long term psychological damage to the baby than if the parents and baby were not separated. Changes in practice occurred to try to eliminate separation but it was clear that this could not always be achieved with sick or preterm babies. In a later publication by Klaus and Kennell (1982), they moderated their views and suggested that the minimal necessary separation of sick and preterm babies from their parents was unlikely to automatically result in severe long-term psychological damage. However strategies to enhance early parent infant interaction should continue to be developed and promoted. In this way the roles that parents expect to adopt after birth can be adapted to more easily (Duvall 1977)

Klaus and Kennell (1982) recommended that strategies to enhance early parent infant interaction included minimising separation, contact between parents and their baby as soon as was possible after birth, promotion of eye-to-eye contact, encouragement of touching, holding and talking with the baby, and facilitation of physical care giving activities. Similar recommendations have been proposed by subsequent authors (Pederson et al 1987, Shields-Poe and Pinelli 1997).

Analysis of the data revealed that most parents had expectations of their role as parents. The basic psychological and physical tasks they expected to perform with and for their baby were clearly related to those suggested by Duvall (1977) and Klaus and Kennell (1982). Depending on their particular circumstances, some parents were able to fulfil their expectations until the baby was admitted to the NNU, after which there were disruptions to their contact and their parental role.

However for many parents their expectations of their interactions with their baby were initially unfulfilled and they had to adopt parenting roles that were not as they had expected. Within the main category of 'About Early Parenting', sub-categorised were identified as 'thwarted first contact', 'frustrating delays', 'hesitant caring' and 'need to hold'.

14.3.1 Thwarted first contact

First contact refers to the interaction immediately after birth when parent expect to see, have eye-to-eye contact with, hold and begin to explore their baby. Words suggesting the sub-category of 'thwarted first contact' included "glimpse", "very briefly", "didn't remember", "insufficient", "quick glance", "30 hours later" "didn't touch" and "in the incubator".

While a few of the mothers were unconscious after a general anaesthetic and could not participate in any immediate interaction, most mothers were awake and sufficiently alert for such interaction. Resuscitative efforts interfered in some cases and/or when the baby was returned to the mother, before being transferred to the NNU, he was in a transport incubator that presented a barrier to the expected first contact.

Three mothers, m25 (prepared), m33 (experience) and m50 (experience) indicated that they had not seen their baby in the delivery room before the transfer to the NNU. There was no reason given to them for this omission and m33 and m50 expressed frustration and impatience as they waited to see their baby. All these mothers were taken to the NNU to visit with their baby on the way to the postnatal ward. This strategy was also used with several of the other participants, supplementing the contact they had experienced in the delivery room.

During her interview, m37 (information) explained that she saw her daughter being born but then she was taken out of the delivery room for resuscitation and when she was returned to her before admission, she could not make eye contact with her.

" ...I just looked down and I just seen her there...and then she just rushed right out and the next time I seen her she was all cleaned and had the wee hat on and her eyes were shut..." (m37, information).

The sense of disbelief that her baby was taken from her was clearly expressed by m4 (unprepared) who said that,

"...she was, she was there, she was there and then she was gone..." (m4, unprepared).

Further exploration of the circumstance around the time of birth revealed that m4 had briefly seen and touched her daughter before she was taken to another room for resuscitation, but the speed with which this occurred and so the lack of time to have contact with her, was very limited.

"...the baby was out and she was there, I touched her, I looked at her, I touched her, she was like grey and it was just fae there on she was gone, there were breathing difficulties and the baby was away.." (m4, unprepared).

The change in terminology used when referring to her daughter in this dialogue appears to emphasise the interrupted relationship between m4 and daughter. The word 'baby' is used at the beginning but 'she' is used when m4 and her daughter have contact. This possibly indicates the anonymity of the fetus to m4, when she refers to her as 'the baby'. After birth when m4 sees and touches her daughter, she possibly acknowledges her as no longer an anonymous being but as her daughter, referring to her as 'she'. Then they are separated from each other and m4 may view her more anonymously rather than her daughter, as she refers to her as 'the baby' again.

A similar differentiation was made by m37 (information) when she explained her understanding of the preparation she had, that she,

"...knew that the baby would get taken away...I thought the baby would cry or something...cause you always see them and the baby's squeeling..." (m37, information).

Yet when referring to her daughter after her birth when she failed to establish respirations, m37 said

"...she hadn't ...(established respirations)...so I got a bit panicky, and... (said to the staff)...oh is she OK, she isnae breathing, oh, oh ..." (m37, information).

14.3.2 Frustrating delays

Following the recommendations of Klaus and Kennell (1982), most low risk babies remain with their mothers, are transferred with them to the postnatal wards and they are discharged home together. However for the babies admitted to the NNU, this does not usually happen, resulting in a period of separation. Attempts are made to reduce the impact of the separation by taking the parents to see the baby in NNU as soon as possible. For the participants involved in the 'study', many were enabled to visit their baby in the NNU. Some of the partners accompanied their baby to the NNU and were able to report back to the mothers. Some mothers visited the NNU en route to the postnatal ward. However, some mothers indicated that there was considerable delay between their baby's birth and when they first saw their baby in the NNU that added to their anxieties.

Words suggesting the sub-category of frustrating delays included "considerable delay", "12 hours", 24 hours", "30 hours", "36 hours", the next day" "two days", "had taken ages", "very frustrating", "disappointing", "eventually", "at last", "very scared" and "still working on them".

After a very brief glimpse of her son in the labour ward, m57 (experience) had a wait of 24 hours before she saw him again. She made it very clear that this was not because she did not want to visit, just that there had been no-one to take her and she was not well enough to visit on her own. She was frustrated by this wait, wondering what was happening to her son.

Much of m57's delay appeared to be due to organisational midwifery/nursing care problems. She had to wait to have intravenous lines and catheters removed, have a shower and her daily examination and then there was no escort for her to visit NNU. The priorities of care for m57 do not appear to have met her needs. Had her emotional and psychological needs been taken into account as much as her apparent physical needs were, perhaps the delay could have been reduced, the frustration reduced and the opportunities for parent infant interaction maximised.

For m7 (unprepared) there was also a frustrating delay of 24 hours. Although she had been able to hold her daughter for about 25 minutes after she was born, her daughter's condition deteriorated requiring admission to the NNU. Because m7 was also unwell, her first visit to the NNU was 24 hours later, during which time she had feelings of doubt as to whether she had really given birth that added to her frustration with the delay.

This mother acknowledged that,

"...it's a sort of funny feeling but like I had her and..., like 24 hours later it was like well did I have her? You know what I mean, because I hadn't seen her...I think it was, it was just like I began to, it sounds stupid, but like disbelieve that I had had her..."(m7, unprepared).

Such feelings have been identified by Affonso et al (1992) and Wereszczak et al (1997) and strategies have been suggested to try to reduce the separation. One strategy is to provide a video link so that parents who are unable to visit the NNU for whatever reason, can see their baby and what is happening to them at any time.

A video link was provided for two mothers, with varying responses. For one, m62 (prepared), the opportunity was helpful but she still needed to see her baby herself by being in the NNU. The other mother, m49 (unprepared), felt the picture was so indistinct that it was not worth viewing and she also needed to see her baby herself.

Another strategy is to take photographs of the baby as soon after admission as possible to give some tangible evidence to the mother that she has given birth, especially if she cannot visit the unit immediately, thus possibly alleviating some of the frustration (Affonso et al 1992, Brunssen and Miles 1996, Wereszczak et al 1997). This strategy, practised in the NNU, was shown to be helpful and unhelpful for the participants.

Having only had a profile view of her twins in the incubator on their way to the NNU, m63 (information) felt this was insufficient. She was therefore very pleased to have even the rather indistinct photographs she was given of her babies. Being able

to see them in the photograph with all the intravenous lines and other equipment had helped m63 understand more of what was happening to them during her 12 hour frustrating wait to see them again in the NNU.

In contrast, m58 (prepared) remained worried about her twins during her frustrating wait, despite having photographs. The twins were brought back to the delivery room in one incubator after resuscitation for a visit with m58, but she remembered little of what they looked like and so was pleased to have the photographs. However, despite the photographs, the delay in her actually visiting the NNU left her time to become very scared, not knowing what they were having done to them and imagining how sick they must be.

One mother, m19 (information), had been too unwell to see her son for two days after his birth. She had been given photographs of him and her partner had been visiting him, but despite this, she became frustrated, so much so that she began to feel she was not his mother, and that she had not even given birth. She also commented that she felt he did not belong to her but to the nurses. She said,

> "...I don't feel like a mother...I don't feel as if I've had a baby... I feel as if he isn't mine" (m19, information).

Although there was a longer delay, 36 hours, between the birth and seeing her baby again, m22 (unprepared) did not express anything that indicated that she did not feel that she was her daughter's mother, but did indicate that she was impatient to see her again. She had not liked the rather poor quality photographs that were given to her. However, instead of m22 visiting in NNU, the nurse brought b22 to the ward to visit her mother and this fitted more with m22's expectations and needs than seeing her in the NNU.

The need to see their babies was felt acutely by the mothers, but this need was often not met because of circumstances that could have possibly been easily overcome. The resulting frustration felt by the mothers appeared to interfere with the accepted benefits of immediate interaction with their baby. Delays may also have interfered

with their subsequent interaction with their baby, although this was not the focus of the 'study'. These feelings were experienced by prepared and unprepared parents.

14.3.3 Hesitant caring

Duvall (1977) suggested that part of parenting is providing physical care for the baby and most parents participating in the 'study' expected to undertake these tasks for their baby. Most parents acknowledged that they were encouraged to visit their baby, and be involved in the decision-making about, and the provision of care for, their baby in NNU as soon after admission as was feasible.

For m64 and f64 (both information), this encouragement resulted in them being able to do what they wanted to with their twins and

> "...enjoyed being part of their care..." (m64, information).

Other parents also reported being able to care for their baby as they had expected to, but for some there was delay in fulfilling some of these expectations and the parents were hesitant in assuming this aspect of their parenting role. This type of experience led to the sub-category of hesitant caring.

Words suggesting the sub-category of hesitant caring included "got the feeling you shouldn't", "prepare yourself for this", "nothing I could do", "what have I done?", "its quite different", "as much as I could do", "inadequate", "felt silly", "felt awkward", "felt useless" and "waiting game".

When discussing the care giving tasks the parents had been involved with, many reported a gradual build up of tasks. The initial visits had been just looking at or touching their baby. This supports the work of Klaus and Kennell (1976 and 1982). One mother, m30 (unprepared) was typical of this scenario. During the first visit she talked with and touched her daughter, on her next visit she had her out for a cuddle, and on the next visit she started to breast feed her.

Gradually more tasks were performed until some parents were performing all the tasks they had expected to with their baby, as was the case with m52 (unprepared). She indicated that she

"...was...(now)...doing exactly as she would have...(expected) ..." (m52, unprepared).

While some parents, like m11 (unprepared) and f11 (information), and m51 (prepared), were very confident in their abilities to provide care, some mothers were hesitant in assuming full care of their baby, and lacked self-confidence. They indicated that they liked to check with the staff that they were allowed to do certain tasks, or that they were doing the tasks in the correct way.

When discussing the plans that the nurses had made with her to cuddle her in a kangaroo care mode (Wyly 1995c), m37 (information) commented during her interview that she was unsure of doing this because of the fragility of her daughter's bones.

"...I don't know if I really want to, her wee tiny bones..." (m37, information).

When talking about the barrier that the incubator presented to her, m7 (unprepared) indicated how unsure she was of what to do.

"...you're thinking well, you know, do I, did I ought to touch it, you know is it is it OK, am I going to do some sort of harm..." (m7, unprepared).

Although she had started to try to feed her daughter, m4 (unprepared) found it difficult because she was still very sleepy. Rather than understanding this as an expected behaviour, m4 interpreted her daughter's non-response as rejection that made her feel,

"...inadequate, I suppose, eh? Because I was there, I was there for her she didn't want me..." (m4 unprepared).

Feelings of inadequacy were also demonstrated by m50 (experience) who could not stay in the unit to comfort her baby when painful procedures were being performed.

Some, like m22 (unprepared), were glad the nurses were there to care for the babies because of lack of confidence in their own abilities. However others, like m38 (experience), felt resentment of the nurses caring for their baby when they had expected to be providing all the care unaided. This resentment was sometimes more disguised when mothers like m55 (experience) suggested they would be glad to have their baby back in the ward so they could provide the care and

"...look after him properly..." (m55, experience).

However this view also indicated the importance of being able to offer care independently thus meeting the parents' care giving expectations. Although m54 and f54 (both unprepared) had gradually learned how to care for their son and were doing all the care-giving tasks, m54 commented that she did not feel like

"...a real mum...(m54, unprepared),

because she was not caring for him in the ward as she had expected.

Participating in care giving is very much part of becoming a mother/parent (Duvall 1977). For parents whose baby is in NNU, involvement in care-giving appears to be more difficult. While much of the difficulty is due to the condition of the baby, some is related to opportunity and to parents' self-confidence. If the opportunities are not given to parents and/or if they lack the confidence to perform the care-giving task, the whole process of becoming a parent can be interfered with.

14.3.4 Need to hold

The expectation of holding and the need to hold their baby was one that was conveyed most strongly by parents. Initially this sub-category was coded as empty arms but this conflicts with the experience of empty arms that was identified in parents whose baby had died. As well as the expected emotional longing for the dead baby, empty arms accurately describes the physical ache bereaved mothers complain of in their arms because they do not have a baby to hold (Ilse 1982).

For many of the mothers in the 'study', when discussing the care giving activities they were involved with, holding their baby appeared to be a physical as well as an emotional need. Words suggesting the sub-category of need to hold included "haven't held", "most important thing", "holding is a long time off", "missed doing normal things like holding them" and "really wanted to hold them".

As indicated in section 14.1.2, the need to hold the baby was vividly described by m24 (unprepared), who said that she was,

"...desperate to hold (him)..."(m24,unprepared).

The longing she was experiencing to hold her baby was also strongly expressed by m65 (information). The impatience expressed by m37 (information) to hold her daughter was graphic when she complained about having to wait until the respiratory support her daughter required decreased. Speaking to the respiratory support equipment she said,

"...oh sort of hurry up...I want to cuddle her..." (m37, information).

Because m59 (unprepared) had not held her babies, she felt that they were not hers. In a view similar to this, m50 (experience) said she that because she had not held her daughter, she did not

"...really feel like a mum..." (m50, experience).

In contrast, m51 (prepared) had seen her baby at birth and had held her before she was admitted to the NNU. She had visited regularly since her admission and felt pleased that she was getting as much contact and experience of caring for her as was possible. The importance of holding the baby was emphasised by m60 (unprepared), who had also had an opportunity to hold her son before he was admitted to the NNU. Holding him had

"...made it real for me..." (m60, unprepared).

Although m56 (information) was also visiting her babies frequently, she "missed doing the normal things with them like holding them..."(m56, information).

Despite taking comfort in knowing that the breast milk she was expressing for them was beneficial to them, m56 (information) appeared to consider this of small comfort to her compared with the comfort she would have gained by having her need to hold her babies fulfilled.

Research has shown that by helping parents as early in their baby's life as possible to adopt a parenting role with their baby there are benefits to the parents' self-esteem, self-confidence and their relationship with their baby (McHaffie 1987 and 1990, Bass 1991). Holding their baby was clearly a very important, if not an essential, part of beginning the relationship with their baby, certainly for the participating mothers.

14.4 About staff

14.4.1 Information, prenatal and postnatal

There were clear contrasts between the information given prenatally and postnatally in relation to quality and quantity, and also contrasts between the individuals giving the information. Words suggesting the sub-category of 'Information, prenatal and postnatal' included "well-informed", "grateful", "helpful", "better than", "would have preferred", "midwives", "doctors", and "old bats".

For m44 (unprepared), the midwives in the day assessment unit and the NNU were better at meeting her needs for information than were the midwives on the postnatal ward. However she did offer a possible explanation for this difference in that the latter were,

> "...very short staffed and didn't have the time for all the women..."
> (m44, unprepared).

Women's perceptions of the poor staffing levels on the postnatal wards had been identified in a previous survey in Lothian (Lothian Maternity Survey 1993). It was disappointing to note that such perceptions persist five years later.

The contrast between the NNU and other staff was also highlighted by m58 (prepared) who felt she,

"...got on better with the neonatal staff than the antenatal ward staff..." (m58, prepared).

Her rationale for this difference was that the NNU staff told her what she wanted to know about her sons and their care, implying that the ward staff could not or would not do this. In essence, this perception is accurate, as the NNU is staffed separately from the postnatal ward. Unless there is planned, effective communication between the NNU staff and the postnatal ward staff, the latter lack information about babies and their care in NNU. Alternatively, if the mother and the baby were cared for by the same staff, communication would be less problematic. Transitional care units provide for such care, assuming that the baby requires special care (BAPM and NNA 1992) (see Appendix 1). Transitional care is unavailable in the hospital in which the 'study' was undertaken. However, even if it had been available, transitional care is considered unsuitable for babies who require intensive care (BAPM and NNA 1992) (see Appendix 1), like b58 I and b58 II.

Having been given sufficient information from the doctor prenatally about what might happen with her babies, m58 (prepared) had not felt the need to ask the midwives in the antenatal area further questions. However she felt she could only have asked some of the midwives for information as the others she perceived as not approachable. She graphically described the unapproachable midwives as

"...old bats..." (m58, prepared).

For m58, the unapproachability of some midwives was not a problem in respect of getting the information she required, because she used another source, the doctors. However, had the doctors not given her the information she required, the barriers to communication she perceived with some midwives might have resulted in much less information being available to her in preparation for the birth of her sons and their postnatal course. Kirkham's (1989) excellent qualitative study, exploring the ways in which information was given or not given by midwives to women in labour,

revealed that many midwives were unaware of the barriers they presented to effective communication. This findings relates to the experience of m58 as some midwives in the prenatal area appear to have been unaware of the barriers to effective communication they were perceived to present to m58.

The deficiencies of the prenatal information-giving were also addressed by m33 (experience) who wished that,

> "...the information ...(my partner and I)... got during the time leading up to the delivery had been as good as the information ...(we)...got on the unit..."
> (m33, experience).

It is expected that midwives assess the emotional, psychological and educational needs of women in their care to ensure that appropriate plans of care are developed (Sweet 1988). Considering m33's poor obstetric history and the fact that she felt that there would be problems with this baby also, such discussions could be considered even more important, yet these appear not to have taken place to m33's satisfaction in the prenatal period. Indeed m33 recorded in the parent's questionnaire that she had received no information prenatally.

This deficit in care was not rectified in the intrapartum period because of the emergency condition that resulted in b33's birth by caesarean section. Indeed both parents felt that they lacked the information they required during the hectic situation immediately before the birth, thus compounding the deficit in care. It was acknowledged by f33 that had they not had previous experience of such complications, both parents would have been very frightened. With their needs for information not met, both parents had been anxious, although they did indicate that their anxiety was not as severe as it might have been had they not had previous experience. Their information needs were met by NNU staff after their daughter's admission, so then some of their anxieties were reduced.

It was clear that m33's needs had not been met before the birth of her daughter, and this was also the case for m40 (prepared). She had a previous baby in NNU and had

gleaned information about NNU care during this pregnancy from a leaflet. However for m40, the community midwives had been the source of her considerable anger. They knew of her previous experience of NNU, yet appeared dismissive of this, indicating that,

"...it wouldn't happen again...(and that she)...shouldn't worry..." (m40, prepared).

She felt the midwives lied to her as they could not know that this pregnancy would be uncomplicated. She was also concerned about their false reassurance in that she felt that worrying was something she would be unable to avoid during the pregnancy. She would have preferred that the midwives had been honest and indicated to her that they did not know what would happen, and that they had more realistically offered her support regardless of what happened during the pregnancy.

The apparent dishonesty and the false reassurance of the community midwives may have indicated their actual feelings, thus revealing an unacceptable lack of professional knowledge, in that having had a baby in NNU predisposes a mother to repetition (Korones 1986). However this may have been a genuine attempt to boost the morale of m40 after her previous pregnancy outcome. Whatever the explanation, the midwives did not understand m40's needs and therefore these remained unaddressed, resulting in her justifiable feelings of anger.

In contrast, after her baby's admission, m40 was given honest and ongoing information from the NNU staff, many of whom recognised her from the previous admission. She was very grateful for this as it assisted her adjustment to having another baby in the NNU.

It was clear that many other parents had similar feelings. They were very grateful for the initial and ongoing information from NNU staff and doctors. The open, honest, helpful, understandable information that NNU staff gave helped the parents come to terms with the disappointments of having a baby in NNU, and they felt supported.

This was the case for m34 (unprepared), where the effective communication by the NNU staff had

> "...contributed to ...(her)...more relaxed approach now as well as...(her)...resignation to simply waiting for ...(her baby's)... return to the ward..."(m34, unprepared)

For m45 (experience), the communication she had with the NNU staff had been so helpful to her during a previous baby's admission to NNU that she was much more relaxed and happy that her subsequent baby was in NNU.

The communication skills of one doctor were particularly praised by m32 (unprepared), who recalled the first contact she and her partner had with him. He had,

> "...got down to ...(their)...level by sitting on a similar chair, had good eye contact...(with them)... and had spoken in simple, straight-forward terms..." (m32, unprepared).

This clear explanation suggested that m32 and her partner were very impressed by these communication skills, but also that they were not accustomed to such consideration. The use of effective communication skills, especially during times of potential crisis, is considered paramount (Caplan et al 1965, Kirkham 1989).

In contrast, when m24 (unprepared) was admitted, the midwife said that a paediatrician would visit m24 and her partner in the labour ward to speak with them about what would happen to the baby. This did not happen and was a source of additional anxiety for these parents, despite f24 having read information about NNU care.

Unfortunately, while m54 and f54 (both unprepared) were both very grateful to the NNU staff for the information and care given to them, they still were left with a sense of loss. Their baby was in NNU rather than with them, therefore good communication and care did not

> "...make up for what...(they felt they)... had lost..." (m54 on behalf of herself and f54, unprepared)

Summary

Prenatal information about NNU care was seen as lacking or inadequate by many parents, while postnatal information given by NNU staff appeared to meet most of the parents' needs. The communication skills of NNU staff were generally praised.

14.4.2 NNU staff are good, but ...

Parents were usually grateful for the care NNU staff gave to their baby, including the technical care that parents could not provide. However, generally they would have preferred to care for their baby as they had expected to, and that the baby was not in NNU. The focus in this sub-category is on the parents' feelings about the staff and the contrast with what they would have preferred. There are close links with the analyses presented in section 14.1.1 on "Disappointment Contrasting with Reluctant Resignation", in section 14.3.3 on "Hesitant Caring", and in section 14.3.4 on "Need to Hold", therefore reference to these sections is recommended.

Words suggesting the sub-category of 'NNU staff are good, but ...' included "happy", "welcoming", "grateful", "encouraged", "in the way", "outsider", "wasn't mine", "lost out", and "to myself".

Parents usually acknowledged that the NNU staff were pleased for parents to visit their baby. For m49 (unprepared), the staff welcomed her to the unit, while m38 (experience) felt the staff were

"happy for...(her)...to visit (m38, experience).

A few parents felt that their visits to NNU were disruptive to the care their baby was receiving and so, despite being very keen to see their baby and care for him, they did not visit as often or for as long as they would have liked. Despite being encouraged by staff to visit and knowing within herself that she did not interfere with the care they were giving her baby, m50 (experience),

"felt in the way..." (m50,experience).

She tended to visit only for short periods. This feeling of being in the way was also expressed by m49 (unprepared).

In the review of the literature (see section 4.1.2) it was evident that parents felt they were separated from their babies when they were admitted to NNU. For some, this separation had the effect of them not appreciating that they had given birth or that the baby did not belong to them but to the NNU staff (McHaffie 1987 and 1990, Affonso et al 1992). In the 'study', similar feelings were expressed by parents.

Such feelings were graphically described by m39 (prepared). Having looked forward to her pregnancy for so long, she had difficulty coping with the unexpected complications during her pregnancy. When her son became unwell after birth and was taken from her to the NNU, she felt as if she had not given birth to a baby.

"...although...(she)...could go to the unit and see and touch him, it was as if he wasn't mine...he belonged to the nurses and...(she)...felt much of an outsider..."
(m39, prepared).

This mother was expressing breast milk and knew that this was something only she could do, yet it was not enough to eliminate her feelings of alienation.

Expressions of gratitude for the care the NNU staff were giving came from m54 (unprepared), but she also felt that she had been denied the opportunity to care for her baby herself as she had expected. Because she was not providing this care, she felt she and her partner had,

"...lost out..." (m54, unprepared).

For m5 (unprepared), the NNU staff were good but she felt she had to share her daughter with them. She would have preferred that she had been in the postnatal ward with her where she could have her,

"...to myself..."(m5, unprepared).

In contrast, there were a few parents whose relationship with their baby appeared to be unaffected by the separation. This was the case for m14 (unprepared) who was pleased with the care her babies were receiving but felt they belonged to no one else but herself and her partner.

Summary

While the parents felt the care their baby received in the NNU was good, it was clear that many parents had reservations. These reservations were related to the fact that they did not want their baby to be in the NNU and would have preferred to be providing the care themselves. Prepared and unprepared parents shared these feelings.

Findings

Chapter 15

Congruity and incongruity of the quantitative and qualitative measures of parents' anxiety

Introduction

Although the state anxiety score of the STAI was used by previous researchers (Blumberg 1980, Gennaro 1986 and 1988, Shields-Poe and Pinelli 1997), the trait and state scores have less often been compared (Blumberg 1980, Shields-Poe and Pinelli 1997). The analysis of the difference between the state and trait scores in the 'study' was reported in section 13.1.3 and 13.2.3. Using the definitions established for the 'study' (see Glossary), parents were defined as having no change in their anxiety, or being more anxious, or a being less anxious than usual when they were assessed after their baby was admitted to the NNU. Several qualitative sources of data were generated to enable deeper understanding of the experience of parents. When the data from these sources were analysed, a general assessment of the level of anxiety experienced by parents was described (see section 14.1.1). These descriptions were compared with the STAI and other quantitative data to assess congruity.

Congruity was established if the parental anxiety demonstrated in the qualitative, STAI and other quantitative data matched. Incongruity was established if there was any mismatch between the parental anxiety demonstrated in the qualitative, STAI and other quantitative data. The results of the comparisons are reported in this section.

The chapter begins with an explanation of the other data sources used for comparison with the difference between the trait and the state anxiety scores. Examples of the three types of congruous results are given, followed by examples of the three types of incongruous results. For completeness, the incongruous findings

are presented in a table format in Appendix 20. The section ends with a discussion of the possible reasons for the incongruity and a summary.

It should be noted that while 25 fathers were recruited, only 24 completed the STAI sufficiently well to allow analysis. Of the 24 fathers, there were 13 with whom the 'researcher' had no direct contact, therefore the congruity/incongruity of quantitative and qualitative data of only 11 fathers was assessed. The congruity/incongruity of quantitative and qualitative data of 64 mothers was assessed.

15.1 Data Sources

There were four data sources from which data were used for comparison with the difference between the parents' trait and state anxiety scores. These sources were the researcher's field notes of the situational factors, verbal interactions with parents, and parents' non-verbal behaviour, and the written assessments by staff of their perceptions of the parent's need for encouragement and preparedness.

Three situational factors were assessed. The first was where the meeting between the researcher and the parent/s took place, i.e. in the ward or in the NNU. If the meeting took place in the ward this may have been simply by chance, or more convenient to the parent/s or the parents may have been disinclined to visit the NNU. The latter could be considered an avoidance strategy used to cope with an increased level of anxiety (Lazarus 1966, Bailey and Clarke 1989). The second factor was whether the mother was in bed or not. While her medical condition may have dictated rest in bed, it could also indicate relaxation, a constructive strategy for coping with anxiety (Lazarus 1966, Bond 1986). The third factor was whether the mother was dressed in her own clothes or night clothes. While wearing night clothes could be more comfortable for the mother, it could also indicate that she was conforming to the sick role (Ball 1987). Wearing her own clothes might have been necessary because she had been discharged from hospital, or that she was exerting some control over her situation, a constructive defence mechanism (Lazarus 1966, Ball 1987, Bailey and Clarke 1989).

Each parent's verbal expressions of feelings were assessed and summarized, indicating whether the parents felt anxious or not. The variety of words described in the qualitative analysis in section 14.1.1 also provided guidance for this part of the analysis. Some parents were very vocal about their feelings, expressing the variety they experienced, while others were more reticent or appeared less comfortable expressing how they felt.

The non-verbal behaviours that were assessed included affect, demeanour, mood, autonomic disturbances, and body movements. Typical descriptions of how anxious individuals present were used to judge parental anxiety (Selye 1950, Spielberger et al 1983, Powell and Enright 1990). While it was judged an inappropriate tool for formal use within the 'study', the guidance given in the Brief Anxiety Scale for the assessment of anxiety was particularly useful in the generation of qualitative data (Tyrer et al 1984) (see sections 9.1.2.6 and 10.2.1).

Participating staff were asked to give written assessments of their perceptions of the parents' need for encouragement and preparedness. It was evident during the analysis that some members of staff had not remembered clearly their perceptions of the parents. This memory lapse may have been due in part to the time gap between caring for the baby and his parents and participation in the 'study'. Recalling events can distort the accuracy of data (Robson 1993). Of the available assessments by staff, some contradicted, while others confirmed the impression of the level of parents' anxiety given by the other qualitative assessments. These factors were taken into account when assessing the data for congruity. However in some cases the assessments by individual staff members of the same parents contradicted one another. These assessments were considered unreliable and were usually discounted in the analysis.

It had not been the intention of the researcher to compare the quantitative and qualitative data, but to use both to develop a fuller understanding of the parent's

experiences. When the data sets were analysed it became evident that comparison would be possible. As is clear from the explanation of the data sources, there were many variables that provided the description of each participant. However specific data were not matched for each participant therefore a direct comparison between the participants was not possible. A comparison between the qualitative data and the STAI data for each participant was possible.

A factor considered during the assessment of congruence and interpretation of the findings was the potential for unreliability of the quantitative data. The questionnaires for use with the parents and the NNU staff were designed by the researcher based on tools used in previous research (see sections 9.1.1 and 9.3.1), and their reliability and validity had not been evaluated. The established reliability and validity of the STAI had been questioned when used with women in the post natal period (Hundley et al 1998) (see section 15.4). However, the data had been generated and it was the responsibility of the 'researcher' to analyse and interpret them as carefully as possible, making only limited recommendations based on any findings.

15.2 Congruity between quantitative and qualitative analyses

In this section there is illustration of the three categories of congruence identified from the data in three subsections. The categories are 'more anxious and congruent', 'no change and congruent', and 'less anxious and congruent'.

15.2.1 More anxious and congruent

There were 26 (41%) mothers and nine (38%) fathers in whom the quantitative difference between the trait and state anxiety scores indicated that they were more anxious than usual, i.e. their state score was more than 10 points higher than their trait score. When the quantitative findings were compared with the qualitative data, congruity was demonstrated in 22 of these mothers and 5 five of these fathers.

Typical of the mother in this category was m49, who was unprepared for her daughter's admission to NNU. Her trait anxiety score was 48, reflecting medium anxiety, while her state anxiety score was 64, reflecting an increase of 16 points to a severe anxiety score. The factors in m49's situation were that she was in bed, in night clothes. Both of these factors were due to the mother's illness. However, verbally m49 reported that she did not see her baby for three days after the birth because she was ill. She was shocked to see her 25 week gestation daughter, was frightened to touch her and felt useless when she visited the NNU, so kept her visits short. She was hopeful for her daughter's survival. These feelings demonstrated that m49 was very anxious, and was trying to cope with her feelings by focussing on what she hoped would be a positive outcome for her daughter. No non-verbal behaviours demonstrating anxiety or relaxation were noted for m49. The participation of f49 was only to complete the STAI by post, therefore congruence could not be assessed. The NNU staff caring for b49 reported that both parents appeared shocked and needed encouragement to participate in their daughter's care. Staff perceived them as shy but supportive of each other. This assessment by staff appeared to indicate an anxious mother. Therefore the assessments by the 'researcher' and by the staff were congruent with difference of more than 10 points between trait and state anxiety measured in this mother.

15.2.2 No change and congruent

There were 34 (53%) mothers and 15 (63%) fathers in whom the quantitative difference between the trait and state anxiety scores indicated that they were no more anxious than usual, i.e. their state score was within 10 points of their trait score. When the quantitative findings were compared with the qualitative data, congruity was demonstrated in 23 of these mothers and four of these fathers.

Typical of the mother in this category was m34, unprepared for her daughter's admission to NNU. Her trait anxiety score was 26, reflecting low anxiety, while her state anxiety score was 26, reflecting no difference in her anxiety from usual. The

situational factors noted were that she was in bed, in night clothes, writing letters and waiting for her husband to visit. Verbally she indicated that she had been very upset in labour when she realized she required a caesarean section and then was very upset and crying when her son was admitted to NNU. However she was much more relaxed and was doing most of his care in NNU. Her demeanour and affect suggested that she was relaxed and comfortable. These assessments were congruous with the quantitative measure of anxiety, although there was no assessment from NNU staff to give further evidence of congruity.

15.2.3 Less anxious and congruent

There were four (6%) mothers in whom the quantitative difference between the trait and state anxiety scores indicated that they were less anxious than usual, i.e. their state score was more than 10 points below their trait score. No fathers showed this difference. When the quantitative findings were compared with the qualitative data, congruity was demonstrated in two of these mothers.

Typical of this category was m13 who had previous experience of NNU. Her trait anxiety score was 33, reflecting low anxiety, while her state anxiety score was 20, reflecting a decrease of 13 points within the low anxiety range. For m13 the situational factors that were noted were that she was in bed, in night clothes. Verbally she acknowledged that she had been very upset initially but then she became glad that her daughter was in the right place. She was now pleased and thrilled to have her daughter in the ward with her. Non-verbal behaviour indicated that she was relaxed, looking very pleased with her daughter's transfer from the NNU. These assessments were congruous with the quantitative measure of anxiety, although there was no assessment from NNU staff to give further evidence of congruity.

15.3 Incongruity between quantitative and qualitative analyses

When comparisons were made between the qualitative and quantitative data of the remaining 17 (27%) mothers and six (25%) fathers, incongruity was identified. The table in Appendix 20 summarises these data and indicates the incongruent aspects. In this section, there is illustration of the three categories of incongruity identified from the data in three subsections. The categories are 'more anxious but incongruent', 'no change but incongruent', and 'less anxious but incongruent'.

15.3.1 More anxious but incongruent

There were five (1%) mothers, two of whom were prepared, and three (13%) fathers, two of whom were prepared, in this category.

A typical mother in this category is m5 who was unprepared. Her trait anxiety score was 36 and her state anxiety score was 58, a 22 point increase. However analysis of her qualitative data did not suggest she was anxious. She sat on her bed, demonstrated non-verbal behaviour that indicated she was comfortable and relaxed, and she chatted easily to the 'researcher'. She said she had been very concerned initially about her daughter's admission but was happier now she was being transferred to the ward to be with her.

In this category, f41 was a typical father. He was unprepared. His trait anxiety score was 30 while his state anxiety score was 55, an increase of 25 points. He said he was pleased his son was in the NNU and was pleased with his progress. He appeared relaxed during the conversation. Staff perceived f41 to be prepared and calm although he needed some encouragement to participate in his son's care.

Therefore while these parents appear not to be anxious, their STAI scores indicate that they are more anxious than usual.

15.3.2 No change but incongruent

There were 10 (16%) mothers and three (13%) fathers in this category. Preparation for NNU care was acknowledged by five mothers and one father.

In this category, m25 was typical of a mother in whom there was no difference in her moderate level of state and trait anxiety, but analysis of the qualitative data sources suggested that she was very anxious. She was in bed, participating in a religious feast with her husband and sister-in-law, and appeared to be enjoying the experience. The feast was independent of the birth of her son. She had received information about NNU and had previous experience. However, she said that she felt numb and could not take in what had happened to her. She indicated she was finding it difficult to find a suitable time to visit her son, which may have been a sign of avoidance. Therefore she appeared anxious yet was able to relax and enjoy celebrating a religious festival, again possibly avoidance.

A father who was typical of this category was f35. There was only a nine point difference between his trait and state scores, although this represented a move from low to moderate anxiety levels. However he was perceived to be very anxious. He had a flat affect and slouched in a chair in the postnatal ward area. His wife was busy packing up her possessions prior to going home. He was drinking, eating and watching television with apparent disinterest in what his wife and the 'researcher' were doing. While on his questionnaire he indicated that he had no preparation for NNU, he said he visited NNU prior to his daughters' births and this helped him keep in control. However the staff perceived him to be more anxious and more visibly upset than his wife. His wife had a 31 point increase in her state anxiety to a severe anxiety level. He was also perceived to be fearful of holding his daughters.

Therefore the parents in this category appear to be very anxious, but the STAI data suggest no difference in their trait and state anxiety.

15.3.3 Less anxious but incongruent

There were two (3%) mothers, m26 and m56, in this category, one prepared, the other unprepared. There were no fathers in this category.

The example of m56 is used to illustrate this type of incongruity. This mother had information about NNU during her first prenatal visit. She had given birth to twins and she had no social support. There was a 14 point fall in her state anxiety score from her trait anxiety score, suggesting she was less anxious than usual, yet m56 appeared very anxious by her verbal and non-verbal behaviour. She appeared very busy in her ward area, getting her possessions together in a manner that was like housework. She said she was still very concerned about her babies and had been shocked initially. She did not like the equipment and missed doing the care she had expected to be undertaking for her children. The staff perceived her to be very shocked initially, having only short visits to NNU. The shock was perceived by NNU staff to be lessening and she seemed to be more relaxed. However she still needed encouragement from staff to participate in the babies' care.

Therefore while m56 and m26 appear to be anxious, the difference in their STAI scores suggests that they are less anxious than usual.

15.4 Discussion

The majority of the comparisons indicated congruity between the qualitative and the quantitative data. However 23 (26%) parents were assessed as having incongruity between their qualitative and the quantitative data. Parental preparation for NNU care appears to be independent of the incongruity, as virtually equal numbers of parents were prepared, 11 parents, and unprepared, 12 parents. The possible explanations for the incongruity are suggested in this section.

The tool used to measure levels of anxiety was the STAI. This tool has established reliability and validity (Spielberger et al 1983) and been used by researchers studying parents with babies in NNUs, although some have used only the state

anxiety inventory (Blumberg 1980, Gennaro 1986 and 1988, Shields-Poe and Pinelli 1997). The justification for using the STAI is discussed in more detail in section 9.1.2.

However the incongruity found in the sample between the STAI results and the qualitative assessments is of concern. These findings may suggest that the STAI is not the most appropriate tool to use with parents whose baby has been admitted to the NNU. The reliability of the STAI was questioned in relation to aberrant findings in the 'study' (see sections 13.1.2 and 13.2.2). After data generation had begun, the validity of the STAI was questioned for use with pregnant women and those in the postnatal period (Hundley et al 1998), adding to the concerns over the use of the STAI in the 'study'.

Hundley et al (1998) conducted a pilot study of 217 Scottish women to assess priorities for intra-partum care. Anxiety was measured to determine if changes in anxiety were linked to the changes in care priorities. Hundley et al (1998) found that the reliability of the trait scores measured prenatally and postnatally, test-retest measurements, was low. This finding indicated more variability than expected. Spielberger et al (1983) suggested that trait anxiety is the underlying usual level of anxiety that is stable, therefore test-retest measures should be unchanged. Hundley et al (1998) proposed explanations for the apparent unreliability of the trait anxiety. These were that some of the inventory items might be inappropriate for pregnant women, or that the conditions under which the reliability was originally established were unlike pregnancy or the postnatal period, or that the women did not discriminate sufficiently well between the state and trait inventory items.

Hundley et al (1998) suggested that if there were concerns about the reliability of trait anxiety, there were also concerns related to state anxiety. There was a recommendation that further research should be conducted to assess the reliability of the STAI, particularly with pregnant women and women in the postnatal period. The STAI continued to be used for data generation in the 'study', but the reliability of

the data and the validity of the findings are inevitably limited. Further evaluation of the reliability of the STAI for use in pregnant and postnatal women will be recommended from this 'study' also.

Doubt about the reliability of the trait inventory of the STAI may have been one of the reasons for it not being used in some of the previous studies (Blumberg 1980, Gennaro 1986 and 1988, Shields-Poe and Pinelli 1997), although this was not explained. Given the conclusions of the discussion of the other available tools for the measurement of anxiety (see section 9.1.2), if further research confirms the unreliability of the STAI with pregnant and postnatal women, the development of a new tool to measure anxiety may be required.

Incongruity between the qualitative and quantitative data may have been the result of the ability of some parents to present an image that belies the extent of their feelings. Such denial may be a constructive strategy the parents use to cope with the negative stressors they experience (Lazarus 1966, Bailey and Clarke 1989). This is adaptive in the short-term.

Incongruity may have been as a result of a failure of the 'researcher' and/or the NNU staff to accurately assess the parents' behaviours and interactions. The failures may have been due to lack of ability. The 'researcher' is an experienced neonatal nurse and lecturer, who has theoretical knowledge and clinical skills in relation to parental assessment, and teaches the same to midwifery and neonatal nursing students. However her knowledge and skills are limited to what a midwife or neonatal nurse would usually be expected to know/demonstrate. The NNU staff had a range of experience and the majority had some neonatal nurse education, therefore a range of knowledge and skills was expected. NNU staff had to recall their assessment of parents (see section 10.3.1) and this may have affected the accuracy of their assessments (Robson 1993). The 'researcher' made assessment immediately after meeting parents in the writing of field notes. There was minimal delay in this documentation, but recall may have influenced the accuracy of the assessments

(Robson 1993). Therefore the ability of the NNU staff and the 'researcher' to accurately assess parents and/or the procedures in the 'study' may have resulted in the incongruent findings.

NNU staff are expected to provide support for the parents of the babies they care for (Morris 1994, Wyly 1995a, Shields-Poe and Pinelli 1997). If parents demonstrate behaviours that indicate that they are relaxed and coping but that are incongruous with the anxiety they are experiencing, staff may fail to offer support to meet parental needs. There was no evidence of this in the 'study' as parents reported support from staff to be generally good (see section 14.4.2).

However it is important that staff are able to accurately assess parents' needs using reliable and valid tools and/or personal assessment skills. Any assessment tool requires to be suited to regular and repeated clinical use. A formal assessment of anxiety, like the STAI, is unsuited for regular and repeated use in clinical practice and no evidence was located that any suitable tool has been developed. Therefore assessment relies on the skills of NNU staff to qualitatively measure aspects of the parents' non-verbal behaviour and verbal interaction. It is therefore important that NNU staff are aware of the range of feelings parents can experience, the diversity of behaviours parents can exhibit, and the coping strategies they can use, both adaptive and maladaptive.

Summary

In this section the results of a comparison between the qualitative and quantitative assessments of anxiety in parents have been reported. Examples of congruous and incongruous findings were given. No evidence of inappropriate parental support by NNU staff was identified, however this is a possibility.

There are general recommendations that neonatal nurse education programmes include aspects of parental support (UKCC 1993a, Report of working group reviewing neonatal services in Scotland 1997). However, from the findings of this

'study', it is suggested that neonatal nurse education programmes could include input on:

- the range of feelings parents can experience
- the diversity of behaviours parents can exhibit
- the coping strategies parents can use, both adaptive and maladaptive
- the parental support strategies for NNU staff to use to meet the assessed needs of the parents.

One implication for practice arising from the 'study' is that there is supervised practice of inexperienced NNU staff in order that they develop accurate assessment skills of parents' needs, and skills in providing relevant parental support, and that these skills are assessed during clinical performance appraisals.

Findings

Chapter 16

Findings related to NNU staff

This chapter is divided into four main sections. In the first section there is a description of the characteristics of NNU staff, including a summary of the staff questionnaire data. In the second section the perceptions of NNU staff about parental contacts with their baby are reported. The third section contains a summary and discussion of the focus group interactions. The final section of the chapter, the conclusion, contains a summary of the findings.

The reader is reminded about the conventions used in the presentation of findings explained in the 'Introduction to the presentation of findings' section in chapter 12.

16.1 Demographic characteristics of NNU staff

There were 53 NNU staff members who participated in the study. Of these, 33 participated once, 12 participated twice, six participated three times and two participated four times. There were therefore 83 episodes of participation and, because they related to different babies, these episodes were initially analysed as if they were from 83 different staff members (see section 8.4).

The qualifications of the staff sample indicated a mix of nurses and midwives. The largest proportion referred to themselves as nurses, 47 (57%), 21 (25%) referred to themselves as midwives, 10 (12%) referred to themselves as both nurses and midwives and five (6%) were midwifery sisters (see figure 16.1).

The staff who participated in the focus groups had a similar mix of nurses and midwives. There were 7 nurses, three midwifery sisters, two midwives and one who identified herself as both a nurse and a midwife.

Staff members were asked to indicate how long they had worked in the 'study' NNU. The range of experience was from three months to 25 years (range = 24.75 years) (see table 16.1).

Figure 16.1

Pie chart illustrating the percentage of NNU staff using the professional titles of nurse, midwife, midwifery sister, and both nurse and midwife

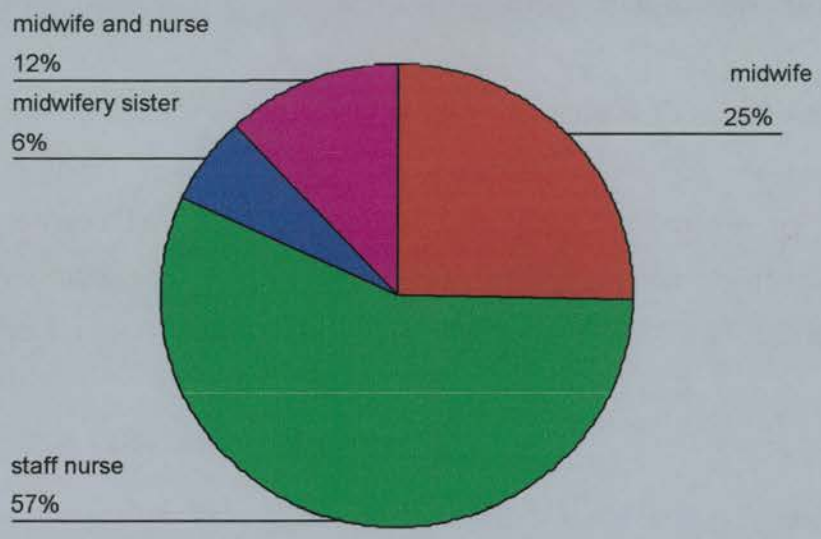


Table 16.1

Number (%) of the total staff sample and number of the focus group sub-sample with specified length of experience in years in the 'study' NNU

Length of experience in years	Number (%) total staff sample	Number focus group sub-sample
0 - 0.75	14 (17)	1
1 - 4.75	36 (43)	5
5 - 9.75	21 (25)	5
10 - 14.75	5 (6)	0
15 - 19.75	4 (5)	0
20 - 25	3 (4)	2
total	**83**	**13**

The mean experience was 5.6 years, the median was four years, the mode was three months. Therefore the sample was biased towards staff with less experience, although smaller proportions of staff did have considerably more experience and two members of staff indicated they had longer experience, but in other NNUs.

The staff who participated in the focus group included only one with less than one year's experience, the largest proportion having between one and 9.75 years of experience, and two of the three staff with the longest experience. No staff with 10 – 19.75 years of experience participated in the focus groups.

The majority of the staff sample, 71 (86%), had completed some form of neonatal education and were considered to be qualified in the specialty, with only 12 (15%) acknowledging no neonatal education. Considering the relative inexperience of the sample, the number who had undertaken neonatal education was impressive (Redshaw et al 1996). All the staff participating in the focus groups were qualified in specialty.

The data generation from NNU staff was conducted over 19 months during which there were changes in NNU staff with members leaving and others recruited. Comparison of the characteristics of the sample with those of the population was therefore difficult. However, to try to compare the characteristics of non-participants with participants, limited data from the staff profile at the completion of data collection were made available. Nurses made up 76% of the staffing establishment, while midwives made up 24%. There was no nurse and midwife combined category and 9% of the staff were designated as sisters. A neonatal qualification was held by 80% of the staff. Accepting the limitations of this comparison, similar proportions of the participants and non-participants held similar qualifications.

In the focus groups, there was under-representation of staff with between 10 and 19.75 years of experience, staff without neonatal qualification. However,

characteristics of the total sample and those of the focus group sub-sample suggest a relevant range of characteristics for the purposes of the 'study'.

16.2 Parental contacts with their baby from the perspective of NNU staff

There were 76 staff members who indicated a numeric value to the contacts (visits with their baby in NNU) mothers had with their babies in the first 48 hours after admission. The total number of contacts was 238, ranging from zero to 30 contacts with a mean of three, a median of two and a mode of one contact (see table 16.2). There were seven missing values representing non-numeric contacts where the staff member had written comments such as 'every day', 'continuously', 'several', 'frequently'. These data have not been included in this part of the analysis.

Table 16.2

Number of mothers and fathers having specified number of contacts with their baby in the first 48 hours, as noted by NNU staff

Number of contacts	Number of mothers	Number of fathers
0	6	31
1	26	19
2	12	13
3	11	5
4	5	8
5	3	0
6	7	2
7	2	1
8	2	2
12	1	0
30	1	0
total number of contacts	**238**	**158**

There were 81 staff who indicated a numeric value to the contacts (visits with their baby in NNU) fathers had with their babies in the first 48 hours after admission. The total number of contacts was 158, ranging from zero to eight contacts with a mean of 1.6, a median of one, and a mode of no contacts (see table 16.2). There were two missing values representing non-numeric contacts where the staff member had written comments such as 'every day' and 'several'.

NNU staff were asked to identify what type of interaction parents had with the baby, and all but 4 (5%) of NNU staff answered. Most staff indicated that the majority of parents had seen, talked with, touched and sat with their baby in the first 48 hours after admission. Because of the importance to parents of holding and giving care to their baby (Benfield et al 1976, Harper et al 1976, McHaffie 1987 and 1990, Jeffcoate et al 1979a, Affonso et al 1992), these aspects were considered in detail.

While assigned to care for a baby in the first 48 hours after admission, there were 23 (28%) staff who indicated that the parents had held the baby. However 60 (72%) of staff indicated that the parents had not held the baby.

Further analysis of the data revealed that only eight (10%) members of staff disagreed with the data from parents about whether the baby had been held or not within 48 hours. In five cases, staff reported that the parents had not held their baby, when the parents reported they had. In three cases, the staff members reported the parents had held the baby, when the parents reported they had not.

While assigned to care for a baby in the first 48 hours after admission, there were 25 (30%) staff who indicated that the parents had participated in the baby's care. However 58 (70%) of staff indicated that the parents had not participated in the baby's care in the first 48 hours.

Therefore the majority of staff indicated that the parents had neither held nor participated in their baby's care during the first 48 hours after admission. This delay

in holding and participation in care could be attributed to the degree of clinical dependence of the babies in the 'study'. This has been established as higher than in the population during the 'study' period (see section 12.4.1). There is also the concern that NNU staff may have experienced faulty recall when completing the data generation (Robson 1993) (see sections 9.3.1.2 and 10.3.1).

NNU staff felt that most parents required encouragement from them to achieve most types of contact with their baby in the first 48 hours after admission. Staff could identify one or more aspects of contact that required encouragement, therefore the staff numbers add to more than 83. There were 16 (19%) staff who felt they had to encourage parents to see and sit with their baby. This finding conflicts with the view of parents who indicated they wanted to see and have their baby stay with them from birth and where encouragement might have been considered unnecessary (see sections 14.1.2, 14.3.1, and 14.3.2).

There were 22 (27%) NNU staff who indicated they had to encourage parents to talk with their baby. Parents may have been unaware of the importance to the baby hearing the parent's voice (Wyly 1995b). However the parents could have been experiencing so much anxiety that they were unable to converse, however simply, with their baby (Selye 1950, Caplan et al 1965, Siegel et al 1998). Alternatively the parents may have felt very embarrassed in the presence of staff speaking with their baby (see section 16.3.2).

The largest number of staff, 42 (51%) indicated they had to encourage parents to touch their baby. Parents acknowledged that while they were keen to have their baby with them as they had expected, when they were admitted to the NNU, their contact with them was altered (see section 14.3). Some parents were hesitant to touch their baby because they were frightened that they might harm the baby and/or had lost self-confidence. Therefore the perception of NNU staff that they had to encourage parents to touch their baby was unsurprising.

Parents indicated their desire to hold and care for their babies as they had expected to do. However many could not do so as soon as they would have wished after the birth because of the condition or needs of the baby (see section 14.3.4). Therefore the findings that only 17 staff felt parents had to be encouraged parents to hold their baby, and 21 staff felt they had to encourage parents to participate in their baby's care, may be because the remaining staff were caring for babies who could not be held or cared for by their parents within the first 48 hours due to their condition. A description of the sample babies showed they were very clinically dependent (see section 12.4.1). The alternative explanation that parents held and cared for their babies without requiring encouragement to do so, is unlikely. As reported above, NNU staff had indicated that only 23 parents had held their baby and 25 participated in care in the first 48 hours.

NNU staff encouraged parents by speaking with them, indicating what would be possible for them to do, explaining to them and showing them how to have the contact. These methods are all recognised as being appropriate means of helping parents to learn about their altered parental role (Klaus and Kennell 1982, Barrera and Rosenbaum 1992, Siegel et al1998).

16.3 Analysis of data generated during the focus groups.

Introduction

The rationale for using focus groups with neonatal nurses and midwives who had participated in the first stage of 'study' was discussed in section 9.3.2. The purpose of the focus groups was so that qualitative data could be generated on the NNU staff members' perceptions of aspects of prenatal preparation of parents for neonatal care and the support they gave to parents of babies in NNU for the first 48 hours after admission.

There was generally more discussion generated in the first two groups then in the third, probably due to the limited number of participants (two) in the third group (see section 10.3.2). However the participants seemed relaxed and there was considerable use of black humour and 'in' jokes in all groups. The participants appeared comfortable with each other to the extent that they were able to voice differring views and personal opinions.

Table 16.3

Summary of categories and sub-categories from the qualitative analysis of the focus group data

Categories	Sub-categories
Prenatal preparation means a tour of NNU	Who toured
	What comprised the tour
	Parents' reaction to the tour
What parents need and how NNU staff help	Touching and holding their baby
	Accepting the baby as theirs
Getting information	
Parental preparation for NNU and differences in parents	Knowledge of parental preparation
	Differences
About preparation	Thoughts on preparation
	Improvements

Listening to the taped discussions and reviewing the transcripts resulted in common aspects being identified. These aspects were then condensed into categories consisting of several themes (see table 16.3). The categories provide the headings for the five sub-sections in this section of the chapter. The themes are discussed within the relevant sub-section.

16.3.1 Prenatal preparation means a tour of NNU

Participants were asked to recall the questionnaire they had completed during the first stage of the study, particularly with reference to the focus of the study that was prenatal preparation of parents for NNU care. The opening question of each focus group asked for the participants' interpretation of 'prenatal preparation'. Without

exception, the participants interpreted this to mean a visit to, or a tour of, the NNU, usually just prior to the baby's birth.

To determine the nature of the prenatal tour of the NNU, participants were asked to discuss the nature of the tour. The data generated were very consistent and as they tended to be very factual rather than requiring the identification of key words and interpretation, a summary description of the nature of the tour was developed, supplemented by explanatory quotations from the participants. While there were several aspects of the tour discussed, they could be easily divided into three main themes. These themes are discussed under the headings of, "who toured", "what comprised the tour", and "parents reactions to the NNU tour".

16.3.1.1 Who toured

The participants agreed that when a woman was admitted to the prenatal ward area with a complication of pregnancy likely to result in the birth of a baby who would require care in the NNU, the midwives asked if the woman could have a tour of the NNU. Alternatively, if the neonatal medical staff had visited the woman in the prenatal ward area to give information or ask for consent for the baby's subsequent participation in research, they could suggest a tour of the NNU. This was again usually arranged by the midwives liaising with the NNU staff. There appeared to be no formal method of arranging the tour and there was no clear method of documenting that a tour had taken place.

Many staff perceived that usually the woman and her partner toured the unit together, either because the partner was immediately available when the woman was invited to the NNU, or the woman chose to wait until her partner was able to attend. Along with several others, this view was confirmed by s1 who said that

> "...if there is a partner there then it tends to be both, because most of ... (the women)... like to wait till ...the partners are in..."(s1)

One member of staff, s8, indicated that in her experience, it was the woman who toured. She said that

"...I don't think I've shown a couple round, its always just been mum..." (s8).

She noted that if the father did not have a tour of NNU, his first exposure to NNU might be when he accompanied his baby from the labour ward while the mother was still in the labour ward. As the mother was the one who had the benefit of the NNU tour, s8 felt the father was disadvantaged. Because other participants in the same focus group had been discussing fathers' reluctance to touch their baby during the initial visits, they subsequently appeared to agree that possibly the fathers' reluctance was related to not having toured the NNU prenatally.

This was not necessarily a view shared by participants in the other focus groups. Their explanations of the reluctance of parents to begin interaction appeared to relate to their perceptions that the parents were frightened or possibly embarrassed (see 14.2.3).

16.3.1.2 What comprised the tour

The main features of the tour included

- seeing the intensive care and the special care parts of the NNU
- seeing what equipment would be used with a baby who required intensive care
- seeing a baby of approximately the same gestational age
- discussing what the usual sequence of events was after admission
- giving information about the visiting guidelines.

Depending on the member of staff, available time and the NNU situation at the time of the tour, other aspects might be addressed, such as,

- meeting staff
- indicating into which area of the NNU the baby would be admitted
- alerting parents to the shift pattern NNU staff followed
- briefly indicating what the parents would be able to do with their baby, although not discussing in detail what their role would be.

There was marked consistency in what the staff in all three focus groups indicated were the key features of the NNU tour. The findings about the content of the tour suggested that there was appreciation of the recommendations from research (Pederson et al 1987, Gennaro 1988, Stewart 1989, Shields-Poe and Pinelli 1997). While more information could have been given in relation to the parental role, and the problems baby's usually experienced, staff indicated that they felt there was a limit to how much information parents could absorb during the tour. Staff therefore limited the information to what they regarded as most useful for the parents at that time (see section 14.2.2).

An aspect that provoked some discussion in two of the groups was related to whether to show parents the intensive care and the special care area, or whether, because of the design of the main special care area, to show parents the special care area at all.

The points of discussion were that some staff thought that the intensive care area might be potentially frightening for parents because of the small size and degree of illness of the babies, and the equipment. However, they also perceived the intensive care areas to be usually quiet, well staffed and with free floor areas, so they looked spacious. While the staff perceived the babies in the special care areas to be usually less sick and bigger, the main special care area was big and had less equipment than the intensive care area but had little free floor area. They felt that there were usually fewer staff in the main special care area than in the intensive care areas, but there were many more babies and visitors, and it was usually much noisier. Therefore the special care area appeared cramped and busy, factors that staff perceived might be frightening for parents.

The staff's rationale for touring the intensive care area followed by the special care area was that this was the sequence of events during the baby's stay in NNU and so helped when explaining this to parents. This rationale assumes that the babies of parents who had toured the NNU are admitted to the intensive care area after birth.

Staff indicated that the parents who toured were usually ones whose pregnancy was designated as high-risk, and therefore their assumption is reasonable (Korones 1986).

However, the majority of the babies admitted to the NNU during the study period were actually admitted to the special care areas of the NNU (see section 12.4.1). The admission of the majority of these babies was unexpected, therefore there was no opportunity for a NNU tour by the parents.

Considering that the parents are very concerned about the imminent birth of a potentially preterm or sick baby, and that the intensive care area could be frightening, s1 indicated that visiting the special care area last, allowed the opportunity for the parents to

"...just end on a cheerier note..."(s1).

However the way in which parents reacted to their tour of the intensive care area guided some staff as to whether they should tour the special care area. The perceptions of the reaction of parents to the tour is discussed more fully in section 16.3.1.3, but it was clear that for some parents, the intensive care area was all they could cope with. If staff identified this, the tour would stop after the intensive care tour. This assessment was summarised by s61 who indicated that,

"...I think you gear, you gear whether you advance to ...(the special care area)...or not, how they (the parents) cope with the visit to ICU, whether you think its appropriate to take them to ...(the special care area). Interestingly some of them (the parents) ... will want to sort of have a good look round and others you just get the feeling that they just want to get out (of the NNU). Its very much geared to the individual, how they react to it" (s61).

Tailoring the tour to the specific needs of the parents in this way conforms with the guidelines for individualised care, applicable to parents as well as to babies (Wyly1995a).

One member of staff was concerned about the baby she chose to show parents as an example of a baby of similar gestation to that of the parents. Her concerns were mainly in relation to the degree of illness of the chosen baby and whether this would give the parents a more dismal or a more hopeful outlook in relation to their own baby. She said

> "...it is kind of difficult when you are showing people around...if you get the 30 weeker...chances are they'll be fine...they'll have a little stay in intensive care maybe but they'll be fairly good...and then you always get the 30 weekers who are awful and need lots of ventilation and aren't well...I find it very difficult where to show people and its very hard to pitch and I may kind of get many wrong in retrospect...you just have to be really careful of what you're showing them I think..." (s68).

Previous research has shown that the appearance of the baby and the equipment are anxiety provoking (Harper et al 1976, Blumberg 1980, McHaffie 1987 and 1990, Affonso et al 1992, Brunssen and Miles 1996, Shields-Poe and Pinelli 1997) but that helping parents appreciate these aspects may reduce the anxiety experienced. This member of staff may have been aware of these recommendations but was acknowledging that it was difficult to match with the unknown during a prenatal tour. She could only guess the size and condition of the prospective baby and equipment they might require to use. Therefore using another baby as an example, she had to ensure that the parents were aware of the possibility that their baby might be different in several ways. This was of concern to her.

16.3.1.3 Parents' reaction to the NNU tour

Several participants felt that the NNU was a place that was unknown to most parents prior to their tour.

This view was expressed by s20, in that most parents,

> "...didn't even know this place existed..."(s20).

This was not expressed as a negative view. There seemed to be general agreement that there would usually be no need for parents to know about NNUs because the majority of pregnancies were uncomplicated and ended in the birth of a healthy baby at term who would stay with his mother in the postnatal ward and home situation. It

was only when there were complications with the pregnancy, labour or with the baby himself, that the parents became aware of the NNU. Considering the nature of their work with sick and preterm babies, it is interesting to note the view of these staff working in the NNU that childbearing is usually an uncomplicated event and that complications are unusual. This view matches that expressed by midwives (Greig 1998), and by some parents (see sections 14.2.3 and 14.2.4).

Staff felt that parents varied in their reactions to the NNU tour, but the majority perceived it as a frightening experience for parents. Other words used to describe the parents' experience of the NNU tour included overawed, shocked, overwhelming, apprehension, and one participant felt the tour was,

"...scaring them (the parents)...(s20).

The main factors staff felt parents were shocked by were the small size of the babies and the appearance of the baby, because they were so different to the parents' expectations.
When describing this aspect, s62 felt that parents,

"...have no concept of size really..." (s62).

However other staff felt that if parents saw very small babies during the tour, then their reaction to their own baby, if he was also very small, was more positive than if the parents had not toured the NNU. Therefore some staff perceived differences between prepared and unprepared parents.

Despite some of the negative feelings the tour could invoke in parents, it was generally perceived by the participants to be of benefit to parents. One summarised the tour as,

"...terrifying but helpful..." (s62).

She went on to describe an extreme reaction she had experienced with parents,

"...some come in and I've had people burst into tears and have to leave..." (s62).

Other participants had experienced the reaction of tears from parents. An explanation of the reaction was given by s1. She felt that when parents toured the NNU, the reality of what was happening to them, the pregnancy and their baby suddenly became real. She said,

"...I really think it hits them and they cry..." (s1).

The helpful nature of the NNU tour was indicated above by s62, however other participants thought there were benefits to parents from undertaking the tour. Most staff members felt that having had a tour, the parents were less overwhelmed by the NNU environment when their baby was admitted. A reduction in their experience of shock was thought by s29 to be beneficial and s8 felt the parents seemed,

"...a bit more confident..." (s8).

Previous research indicated that the NNU environment could be stressful or anxiety provoking for parents (Miles and Carter 1983, Miles 1989, Affonso et al 1992, Shields-Poe and Pinelli 1997). Many of the parents in the 'study' did not find the NNU stressful (see section 14.2.2). However the staff clearly identified a difference in the parents who had experienced a NNU tour and those who had not. The former were perceived by staff to be less stressed by the NNU environment than the latter.

Staff felt that having met at least one staff member during the tour, parents would recognise and link with that member of staff during their baby's admission, even if the member of staff was not assigned to their baby. Knowing someone in the alien environment of the NNU was thought by the staff to be helpful for parents.

During some tours, parents would spontaneously converse with other parents of babies already in the NNU. The conversation the parents have in this situation was thought by staff to be more helpful to the parents than the conversation with the staff. It was thought by s1 that,

"...they tell them probably better than we do..." (s1).

This link was sometimes maintained after the subsequent admission of the baby, and offers similar benefits to parents as when they recognised members of NNU staff. This type of parent-to-parent support is also the basis on which many self-help groups are formed and has been shown to be beneficial in NNUs as well as in other situations (Maclean 1997).

However, the depth of understanding the parents had of NNU after such a brief visit was questioned by most staff. There was agreement that the amount of information staff give to parents during the tour should be limited, using parents' reactions as a guide to how much information was being processed. For s76, it was very much a case of trying not to overwhelm parents by giving them too much information,

"...being careful not to say too much..." (s76).

Staff felt parents had difficulty absorbing too much information because they were still in a state of shock. Typically, s42 felt that parents,

"...just never believe its going to happen to them..."(s42).

This view links to the commonly held view that childbearing is usually uncomplicated (see sections 14.2.3 and 14.2.4).

Staff also had concerns when showing parents round the intensive care area if each bed space was occupied. Parents noticed this situation and often asked into which bed space their baby would go. Staff felt that parents could become even more anxious if they had to give an imprecise answer because they were unaware of the arrangements for ensuring bed availability.

Staff reported that the number and nature of questions asked by parents during the tour varied, with some asking none, some asking for clarification of aspects discussed during the tour, and others asking questions not necessarily related to the information given during the tour. The latter included questions about who, specifically, would look after the baby, how long the baby was likely to be in the NNU and about the special coloured linen and toys seen in the incubators and cots

of other babies. Staff could dismiss these as less important factors and did express limited black humour during the focus groups about them. However there was general agreement by staff that these were probably the aspects that parents could cope with and understand, while being quite overwhelmed by the other aspects of the NNU tour. Whatever questions parents expressed, the staff felt they were responded to professionally and in sufficient detail for the parents to understand. Similar aspects are discussed in section 16.2.3.

16.3.2 What parents need and how NNU staff help

The focus group members were asked to discuss their perceptions of what parents needed during the initial 48 hours of the baby's admission to NNU. One, s20, felt that the overall necessity was for parents to feel comfortable with the situation they found themselves in, with the environment and with the nurse. If this was achieved, parents' other needs could be met. She felt that attaining this level of comfort took time and thus staff support of parents was focussed on helping parents along each stage of the process as they required.

There was general agreement on the principle needs parents had in the first two days after admission and these are discussed under the headings of "touching/holding their baby", "accepting their baby as theirs", and "getting information". There was no order of importance in what staff discussed about parents' needs, nor in the way the three sections are reported.

As well as considering the parents' needs, staff also included their role in supporting parents to meet these needs. The elements of support are included within the discussion under each heading of need.

16.3.2.1 Touching and holding their baby

The main need parents were thought to have was to touch/hold their baby. This consensus view was expressed by s62 who suggested that parents were,

"...desperate to touch (their baby)..."s62.

This perception matches the findings of several studies (Benfield et al 1976, Jeffcoate et al 1979a, Affonso et al 1992), as well as the feelings expressed by parents (see section 14.3.4).

While agreeing with the consensus, s24 was also hesitant. She felt that most parents could touch their baby, but some parents had to wait to hold their baby due to the severity of the baby's condition. Therefore NNU staff had to consider ways of helping parents to touch their baby to compensate for not holding them. Giving the example of having parents lift the baby while staff changed the bed linen, s8 and s29 agreed with the need for alternative strategies.

Whenever the baby's condition allowed, arrangements were made for parents to cuddle their baby or possibly give kangaroo care to their baby (Wyly 1995b). In many cases episodes of holding were uncomplicated. However occasionally, the baby would have an adverse reaction to being cuddled. This deterioration, as perceived by s24 and s61, resulted in parents becoming fearful of holding their baby again. Their fear could seriously delay resumption of holding, even when the baby was well enough to cope with the experience. Knowing this, staff tended to wait until they were very sure that the baby's condition was stable before suggesting holding as an option to parents.

Analysis of the parents' data had revealed that they were aware of the need to wait to hold the baby, and were resigned to, although were frustrated, by the wait (see section 14.3.2).

Even if parents could not hold their baby, learning how to effectively touch their baby was also an important aspect of care in intensive care and techniques to achieve this were discussed by the participants.

16.3.2.2 Accepting the baby as theirs

Staff were clearly aware that some parents feel their baby belongs to the NNU staff and not to them. For s37, it was not so much that the parents felt the baby belonged to the staff but the parents tend to feel that the

"...baby isn't theirs..."(s37).

The staff felt they worked hard to help parents understand that they are the baby's parents and he does not belong to the NNU staff. This was felt to be especially important during the initial phase of the baby's admission. If the mother was not visiting the NNU because of medical/obstetric problems, the father was encouraged to visit and NNU staff also visited the mother to update her on her baby's progress.

However analysis of the parents' data had indicated that for some parents, there had been a frustrating delay in seeing their baby during which only one mother recalled that her baby had been brought to visit her in the postnatal ward. Mothers who were too ill to visit their baby in the NNU did not indicate that NNU staff had visited them to update them on their baby's condition (see section 14.3.2).

The focus groups were undertaken after data had been generated from parents, therefore it was not possible to discuss this aspect of care with parents. Future research would offer the opportunity to explore this more systematically.

Staff indicated that photographs were usually taken of each baby, but that it was especially important to do this, according to s76, for mothers who were unable to visit.

While touching and holding can be very beneficial for parents, other strategies staff used to help parents realise the baby was theirs were discussed by s76, s42 and s20 and included,

- encouraging them to give the baby a name
- encouraging them to bring appropriate toys for the baby

- displaying cards and balloons in celebration of the baby's birth
- mentioning features in the baby that match those of his parents/family, such as eyes.

Staff generally agreed that an important part of helping parents realise the baby as theirs was for them to be introduced in stages to caring for their baby. This process was described by s8 as a,

"...gradual easing into caring..." (s8).

As soon as possible after admission staff indicated that parents were asked to help with the physical care-giving activities they would usually have been learning to do had their baby not been admitted to the NNU. These activities included nappy changing, feeding, mouth care, and linen changing. Participation in these activities has been suggested to help parents lessen the feelings of separation from their baby, and increase their interaction and relationship with their baby, especially when the baby is in the NNU (Benfield et al 1976, Jeffcoate et al 1979a, Affonso et al 1992). Parents acknowledged that they had begun to participate in their baby's care, but had done so hesitantly (see section 14.3.3). There was evidence from the analysis of the staff questionnaire that perhaps participation in care was delayed for some parents (see section 16.2).

There was considerable discussion about how parents reacted to the invitation to participate in care and the differences between the mother and the father. This was an aspect that provoked the use of non-verbal behaviours and some hilarity during the focus groups.

Staff felt that if the mother is unwell after the birth, the father visits the NNU alone. Generally the father appears to them very reluctant to touch the baby at that point. The description, mainly non-verbal, given by s62 was particularly graphic. She said,

"...dad's come up immediately after and you sort of say to them you can put your hand in and touch the baby's hand..." (s62).

Then the description became non-verbal with s62 suggesting that what the fathers do in response is to back away and even put up their hands as if pushing something away, indicating their reluctance and then indicating verbally that,

"...(maybe they will touch their baby)...when they're a bit bigger..." (s62).

NNU staff felt mothers usually displayed less reluctance initially. They usually were keen to touch their baby although more hesitant about actually being involved with care. This type of reaction was described by s24 who indicated that,

"...I think what...whilst they (the mothers) might not want to get involved to the extent of changing a nappy or whatever, I think they're happy to touch them. I think that's a comfort for them..." (s24).

For some staff, the reluctance was a form of fear that parents experienced. The parents were fearful of harming their baby or disrupting the equipment he required. This was especially true in relation to holding the baby. As discussed in sections 14.3.4 and 16.3.2.1, most parents were thought to be very keen to hold their baby but were reluctant to do so, fearful of harming him.

This dilemma was described by s61 who said,

"...I think because the baby is attached to a ventilator, the wires and the drips, they're just terrified to hold this baby, its not just the baby its in case something happens to anything else..." (s61).

Another reason staff gave for parents' reluctance was that the staff felt the parents did not want to make errors in front of them. This view was expressed by s37, who thought that parents might,

"...feel embarrassed in front of us sometimes too that they don't want to muck up..." (s37).

Being watched while giving care can be intimidating and parents would rather not have an audience (Siegel et al 1998). However, leaving parents to perform care unsupervised could be problematic and potentially dangerous. For parents without the benefit of specific knowledge, allowing them to feed a baby by naso-gastric tube without ever being supervised could result in apnoea, bradycardia, aspiration of milk

and even death (Korones 1986). Even changing a nappy on a baby who is very sick could result in permanent hypoxic damage (Korones 1986). While these examples are extreme, supervision is clearly necessary in these and other situations, until the parents and staff are comfortable with their decision making and skills. Only then would it be safe to reduce the level of supervision of parents.

However, staff should appreciate how intimidating to parents their presence during procedures and care-giving can be. They need to be able to gain the trust of the parents and work with them in such a way as to reduce the level of intimidation and yet still ensure safe practice. Giving parents privacy with their baby is a strategy for reducing intimidation and embarrassment (Siegel et al 1998). When parents are simply sitting with their baby or holding or providing kangaroo care, monitoring by staff of the baby's well-being and the parents' capabilities can be more distant, enabling the parents to have private time with their baby. This emphasises the special kind of care the parents alone can give the baby and can encourage further interaction (Wyly 1995b, Siegel et al 1998).

NNU staff generally accepted that parents might be reluctant or hesitant, but worked with each parent to gradually ease them into their care-giving role until the staff perceived the parents to be comfortable with their role. They agreed that this could take much longer than the first 48 hours and was a considerable part of the role of NNU staff.

While her participation in the discussion was limited, s31 was definite in her reaction to the comment that supporting parents is a significant part of the work of the neonatal nurse or midwife. She said,

> "...yes but that's part of your work, its all part of caring for the baby, part of the family unit..." (s31).

However staff acknowledged that not all parents were reluctant or hesitant. The description given by s20 of one mother clearly indicated that she was very keen to assume her parenting role without delay. This mother,

"...was in... (the NNU)... sleeves rolled up, the hands washed, into the incubator doing the nappy and things, (she said) there's your breast milk..."(s20).

While s20 was delighted with this response, it was noted that this mother had experienced NNU with a previous baby. However other participants including s37, indicated that there were parents with no experience or preparation who were keen to participate in the care of their baby as soon as possible after admission. Therefore they felt it was important for staff to assess each parent's needs individually and to work with each parent to meet their needs.

The importance of the parent support role that NNU staff have is unquestionable. The way in which the staff help parents to accept their baby and assume their expected parenting role has a profound effect on the quality of the short and longer term parent-infant relationship (Klaus and Kennell 1982, Wyly 1995b, Siegel et al 1998). The focus group participants felt they understood the needs of individual parents and used strategies to help parents accept their baby.

16.3.3 Getting information

In a manner similar to the information given during the prenatal NNU tour, staff indicated that parents were given information about their baby, the equipment and the NNU after the baby's admission. However the content of the information was more specific to the individual parents and their baby. The information that s31 gave she felt was,

"...more specialised to the baby, first your talking about their baby, that is there, you know what care... (the baby)...is getting. I think I like to be specific..." (s31).

Staff felt that parents generally wanted to be given information that told them that their baby was going to recover and go home, and their questions were usually directed to getting that information. Staff gave examples of parents who had been given an explanation of how sick their baby was and then commonly asked if he would recover. The contrast was described by s42 who said,

"...well they want to be reassured that the baby's really going to be all right. Right so we're faced with their baby but he is going to be all right, it doesn't matter what you tell them, but he will be all right..." (s42).

As well as asking for a long-term prediction of health, parents also asked questions of staff that initially appeared simplistic and irrelevant. However as discussed in section 16.1.3, these questions were generally accepted by staff as inevitable. Staff felt the questions were the parents' way of coping with the stressful situation they found themselves in. They felt parents could not assimilate the details of their baby's admission or illness as this was too overwhelming. However they felt parents could cope with the simple, ordinary aspects they might have been learning about if the outcome of the pregnancy had been uncomplicated, e.g. what the baby weighed, or what length he was.

Whatever questions parents expressed, the participants felt they were responded to professionally and in sufficient detail for the parents to understand. Similar aspects are discussed in section 16.3.1.3.

16.3.4 Parental preparation for NNU and the differences in parents

While the staff had identified that prenatal preparation meant the NNU tour, the preparation that came from prenatal information or previous experience of NNU were suggested to them by the 'researcher' as alternatives. Staff acknowledged that these could be means of preparation for parents, however they felt it was difficult to identify whether parents had experienced such preparation and to quantify differences between prepared and unprepared parents in the early stages after admission. This section is divided in two, focussing firstly on the knowledge of parental preparation and secondly on any differences staff perceive.

16.3.4.1 Knowledge of parental preparation

Most staff suggested that they were usually unaware of whether a parent had previous experience of NNU, prenatal information or had experienced a NNU tour until some time after the current baby was admitted. They felt this was not an aspect of early conversations with parents and it was not usually possible for staff to read or learn about the mother's past history until after the first visit. In many cases, there was no documentation preparation, apart from whether a previous baby had been in NNU.

Occasionally the parent's previous personal experience and/or the parent/s themselves were remembered by the staff member admitting the baby. This was the experience for m42 and m45, both of whom found this recognition helpful to them, although these mothers felt there was no real difference in how they were supported by staff with the current admission when compared with the previous admission. Less often, the person admitting the baby was the one who undertook the NNU tour with the parent/s. In these instance, there might be a slight difference in the content of the information given, although staff indicated that much of the information given during the tour was repeated.

If there was no knowledge of preparation, staff usually

"...treated everyone the same...(s31).

This statement did not imply that there was lack of individual care, only that staff assumed that parents were unaware of NNU until they showed otherwise and required full information. There was no problem with this approach, nor with repetition of information for s8, who felt that many parents,

"...don't normally, you know take in everything in that you've told them..."(s8).

Repetition as a way of emphasising information is considered an accepted educational tool (Quinn 1995). However, repetition of information has also been identified as a feature of postnatal care, when even in uncomplicated situations,

women in the post natal period required information to be repeated as they tended to forget what was told to them (Oakley 1979, Sweet 1988, Siegel et al 1998).

Individuals involved in stressful or anxiety provoking situations also have difficulty in remembering information (Lindemann 1944, Caplan et al 1965, Redshaw et al 1996). Therefore the repetition of information related to NNU care should not be regarded as unnecessary or patronising, but as a valuable strategy to help parents work through and cope with the anxiety-provoking experience/potential crisis of their baby's admission to NNU.

One member of staff indicated that parents always told her of any previous experience of NNU. It was unclear from the tape recording whether s76 meant that this information was divulged during the first visit or later in the baby's admission, although she did indicate that parents shared the information,

"...quite quickly..." (s76).

There was no follow-up discussion of this point during the focus group to determine why this exception occurred, whether any specific strategy was used to glean this information from parents, or whether this knowledge resulted in differences in the support and information given to parents. This would be an important aspect to explore in any further research.

16.3.4.2 Differences

Staff were invited to discuss whether they perceived any differences between prepared and unprepared parents. The overall conclusion was that initially there was no apparent difference with the majority of parents. It was only after some days that differences became apparent, whether or not the staff knew about the preparation.

The differences that became evident included those identified by s42 when referring to parents whose previous baby was in NNU. She felt they were,

"...much more positive...in the handling of the baby, change nappies and things, you know they're not as strange..."(s42).

In a different focus group, s1 felt the parents began caring for their baby and did more care more quickly if they had previous experience. She felt they were,

"...in there doing everything..." (s1).

Following on from s42's comments, s31 indicated that,

"...it is not a strange environment, they are not having to get used to the whole room, the area..."(s31).

Other staff indicated that the parents were more likely to know what to expect and they would be more familiar with the routine, making coping with their baby's admission somewhat less stressful or anxiety provoking. For one staff member, s24, there was some doubt about the effect of previous experience. She felt that the anxiety levels could be increased or decreased depending on whether their previous experience was positive or negative.

This view confirms the finding of the 'study', where some parents with previous experience acknowledged that they were helped by their previous positive experience of NNU, although there were exceptions (see section 14.2.6). Therefore it is important that staff assess each parent individually and respond to their needs appropriately.

Parents with previous experience were thought by staff to be more familiar with the equipment. This confirms the views of parents (see section 14.2.6). The staff in one focus group had a long discussion about how familiar parents could become with equipment, to the extent that alarms were responded to by the parents before staff members could see why the alarm had rung. At least one parent, m40 (prepared), acknowledged that her husband had reverted to this practice, learned during a previous baby's admission, of switching off alarms, much to the consternation of the staff (see section 14.2.6).

The focus on equipment and the technical details of the baby's care were also felt by staff to be something that many fathers used as a means of coping with the stress or anxiety they experienced. They could not cope with all the whole experience but could understand some of what the equipment did. This gave parents a measure of control and therefore they could become quite expert in this aspect of their baby's care (Morris 1994).

Clearly guidelines have to be given to parents about what they can safely do in relation to their baby's care, but consideration also has to be given to the strategies that parents are using to cope with their baby's admission to NNU. Other methods of enabling parents to exert more control in the care of their baby are recommended (Allen 1995b). These include providing information and offering maximum opportunity for parents to be involved in the decisions about the care of their baby. However NNU staff cannot implement these alone, therefore a multi-professional approach has been suggested (Allen 1995b).

16.3.5 About preparation

The participants were asked to consider preparation and their perceptions of its usefulness. NNU staff also took this opportunity to consider how the NNU tour provided could be offered more efficiently and possibly effectively, and what other improvements could be made in the service they provided to parents prenatally.

16.3.5.1 Thoughts on preparation

There was discussion about whether prenatal information about NNU care should be included for all pregnant women. Most participants felt this kind of information would be unnecessary because most childbearing was uncomplicated and that it might provoke anxiety. The possibility of women disregarding information about NNU care because of its irrelevance to them was suggested by s31 and s34. These views corroborated those of midwives (Greig 1998), as well as many of the participating parents (see section 14.2.3 and 14.2.4). This assumption of uncomplicated childbearing has also been discussed in section 16.3.1.3.

Staff did indicate that if information about NNU care was included in general prenatal education classes, then it should be at a very basic level in an effort not to frighten parents. However, s62 was concerned that these classes, starting usually about 28 weeks gestation, would be too late for many of the parents whose babies were admitted to NNU. This was another view that corroborated that of midwives (Greig 1998).

Remembering older practices, s1 recalled the 'hospital tour', as part of the preparation for parenthood classes, always included walking past the NNU so that parents were aware of its existence. That format of the 'hospital tour' had ceased, although resurrecting it might be a method of heightening awareness in a non-threatening manner for parents. Following up on a comment that many parents were unaware of the existence of NNUs, s20 suggested that even if photographs of NNU were displayed in areas of prenatal clinics or wards, then parents would have at least an idea of what the areas looked like. Again this was felt by staff to be a non-stressful way of alerting parents to the existence of NNUs.

When discussing the value of the media's portrayal of NNU care, many staff were concerned that an unrealistic view was presented in the newspapers, magazines and television. In one of her rare contributions, s58 suggested that parents' expectations were too high. This view was also held by s68 who felt that parents expected that because these,

"...miracle babies..." (s68),

had survived, then their baby was bound to survive also. Clearly s68 felt this was not always the case and parents' anxiety might be heightened by such exposure.

The possibility of irrelevance was also discussed by s1 in relation to television programmes in particular. Parents she had worked with had dismissed the programme content as not being relevant to them at the time. They were unable to remember details of the programme when their own baby was admitted, apart from

the fact that they knew NNUs existed. Only one father and five mothers could recall media presentations of NNU, and only the father had perceived that the presentation was relevant preparation for his own experiences (see section 14.2.4).

16.3.5.2 Improvements

One observation that had been made by s37 was that NNU staff had no real control over who participated in the tour. The tour was considered ultimately beneficial but potentially very upsetting for the parents, therefore it was felt that criteria should be set so that only women whose own condition or that of their fetus was designated as high risk, and their partners should be eligible to visit. The woman should also be an in-patient and likely to deliver soon after the tour. These criteria were suggested so that the parents most likely to take the tour were the ones whose baby was most likely to be admitted to NNU (Korones 1986), therefore the ones most likely to benefit from the tour. This strategy would be of no help to parents whose pregnancy was not designated as high-risk and/or whose need for NNU care was not determined prior to the birth.

Two staff, s68 and s62, suggested that if there was sufficient time, parents could be offered a further visit to the NNU. Their rationale for this was that if parents had been upset by the first visit, a subsequent visit might be less stressful and so the visits they made after the baby's admission might be much easier for them. This strategy links well with the crisis management strategy of preparation/rehearsal suggested by Aguilera (1994) and Janosik (1994), as well as the recommendations of Griffin et al (1997).

There was also some discussion by s31 and s37, of a leaflet being available to supplement the tour, so that prospective parents could have some follow-up reading and have material to refer to. Provision of written material is recognised as a useful strategy to reinforce verbal information and is used in many areas in health care and health education (Quinn 1995, Deane-Gray 1997). There is a leaflet about the NNU available, but it is usually distributed after the baby is admitted.

If there were preparation for parenthood classes for all in-patients in prenatal ward areas, it was felt by s37 that basic information on NNU care could be included. If no NNU tour was possible because of an imminent birth, several staff, including two of the most experienced staff who participated, s61 and s1, indicated that NNU staff could also be involved in meeting the parent/s in the labour ward along with the NNU doctors. While the doctors concentrated on the medical aspects, the NNU staff felt parents might appreciate the nursing perspective prior to the expected admission.

While agreeing with the views of s61 and s1, s24 suggested that NNU nurses could visit parents prenatally instead of the doctors, in an effort to make the information given more relevant, because her experience indicated that often parents did not fully appreciate what the doctor had said to them. If the practice of NNU nurses visiting parents prenatally in this way was developed, the parents would have someone else they could recognise in the NNU, a factor that some parents had found helpful to their adjustment (see section 14.2.6).

Summary

The sample of NNU staff included members with a range of professional qualifications and experience expected in a regional referral NNU. The sub-sample who took part in the focus groups had an adequate range of characteristics for the 'study'.

Within the first 48 hours of a baby's admission, most staff indicated they had contact with the parents as they visited their baby in NNU. The nature of the contact parents had with their babies varied, with holding and participating in care perceived as occurring less often. NNU staff felt they offered encouragement to parents to achieve most forms of contact, when such contact was appropriate.

The perceptions of NNU staff in the focus groups indicated that the tour of NNU was the form of parental preparation of which they were most familiar. The tour was

usually held for parents with a high-risk pregnancy, but the content of the tour varied depending on the parents' circumstances and tolerance. Staff perceived that the parents' reaction to the tour also varied from visible distress to helpful.

The needs parents were perceived to have after admission were to touch/hold their baby, accept the baby as theirs, and get information. The staff were aware of how difficult it could be to meet these needs, but offered examples of how to circumvent some of the difficulties.

NNU staff noted the other forms of parental preparation suggested to them but felt that unless they had been personally involved with the parents during their previous experience or the NNU tour, staff were initially unaware of whether the parents were prepared or not. However within days of the baby's admission, parents who had previous experience were usually identifiable because staff perceived their rapid adaptation to the NNU routine and environment.

The NNU staff considered the methods of preparing parents for NNU care and agreed that some way of helping all parents understand basic information about NNU care would probably be helpful. However more detailed information and the NNU tour should be reserved for parents whose pregnancy is designated as high-risk. The content of the tour could be more standardised as could the organisation of the tour. They also suggested that NNU staff be more involved in preparation.

Discussion

Chapter 17

Introduction

This chapter is divided into five sections, each related to one of the research questions (see section 1.5.2). In each section there is discussion of the qualitative and/or quantitative findings, as appropriate, with comparison to previous findings and linkage to the theoretical framework where relevant.

The first section focuses on the preparedness of parents. Because in chapter 15, the findings of the comparison of qualitative and quantitative findings in relation to parental anxiety were compared and discussed, there will be a summary of that discussion in the second section of this chapter.

In the third section the findings related to parental needs are discussed, and in the fourth section the findings related to the extent to which preparation helped meet these needs are discussed. The final section focuses on findings about the support NNU staff perceive parents to require.

There will be no summary to this chapter as the findings and the discussions are summarized in the conclusion that follows in chapter 18.

17.1 Preparedness

All parents experienced the admission of their baby to the NNU, a situation regarded by some as anxiety-provoking or a crisis (Caplan et al 1965, Choi 1972, Harper et al 1976, Blumberg 1980, Gennaro 1986 and 1988, McHaffie 1987 and 1990, Gennaro et al 1990, Shields-Poe and Pinelli 1997). However, none of the participants acknowledged their experience as a crisis.

In sub-section 5.3.3, primary crisis prevention, also known as anticipatory planning, was discussed. Strategies in crisis intervention include opportunities to develop a repertoire of coping skills that prepare an individual for a future crisis (Aguilera

1994). These opportunities or preparation are known as primary crisis prevention or anticipatory planning, because, if the coping skills are used, the individual may avert or reduce a future crisis (Janosik 1994). Primary crisis prevention or anticipatory planning was defined for the purpose of the 'study' as preparation. Preparation for the potential crisis of the admission of a baby to NNU (Caplan et al 1965), was judged an area that required study (see sections 1.4 and 4.3). Therefore the purpose of the 'study' was to determine what preparation parents had, if any, and whether prepared and unprepared parents differed in anxiety levels, having their needs met, and support from NNU staff.

Most parents, 36 (56%) mothers and 13 (52%) fathers, in the 'study' were unprepared for their baby's admission to NNU, i.e. they had no primary crisis prevention/anticipatory planning. The remainder had one or both forms of preparation considered in the 'study', i.e. prenatal information about NNU care, possibly with a tour of NNU, and/or previous experience of NNU. In this section, the findings related to the two types of preparation are discussed in two sub-sections.

17.1.1 Prenatal information

In a survey of Scottish midwives, the majority reported that they gave information to parents about NNU care, whether the baby's admission to NNU was anticipated or not (Greig 1998). The midwives involved in the prenatal care of the participating parents could not be accessed during the 'study', however, based on the survey finding, it was expected that most parents in the 'study' would have received such preparation. However this expectation was not met. A minority, 18 (28%) mothers and nine (36%) fathers, were given prenatal information about NNU. These findings confirmed those of Stewart (1989), that few parents of babies admitted to NNU are prepared in this way.

Some prenatal information about NNU care is given in preparation for parenthood classes (Stewart 1989, Greig 1998). However these classes are known to be unpopular, relatively poorly attended by mothers and seldom attended by fathers,

and fail to meet the parental needs (Oakley 1981a, Enkin and Chalmers 1982, Glikison 1991, Hallgren et al 1995). In the 'study', parents did not acknowledge preparation for parenthood classes as an "other" source of information. This might suggest that they did not attend such classes, the information was not given, or, as discussed below, that parents found information about NNU care irrelevant to them.

In the 'study', some parents suggested that prenatal information about NNU care should not be given. They offered two reasons for this view. The first was fear and the second was irrelevance (see sub-sections 14.2.3 and 14.2.4).

Preterm and LBW babies are more likely to require admission to NNU (Korones 1986). Of the 73 babies born to participating parents, 50 (69%) were preterm and 44 (56%) were LBW. Despite this, parents appeared to concur with the view that pregnancy and childbearing are physiological, uncomplicated experiences (Sweet 1988), and felt that giving information about potential complications to all parents might result in unnecessary worry or fear. This view was supported by some NNU staff (see sub-section 16.3.1.3) and had also been expressed by midwives (Greig 1998).

Surprisingly, many parents also indicated that they had no need for such information, that it was irrelevant to them. If they perceived their pregnancy to be uncomplicated, even if they were exposed to information about NNU care during pregnancy, they felt they had not consciously absorbed it. However, some parents conceded that, had they received such information, they might have had "limited benefit" from it (see sub-section 14.2.5). The potential benefits they suggested were mainly related to seeing the NNU and knowing what it was like, only two of the factors recognised as negative stressors parents encounter in the NNU (Harper et al 1976, Blumberg 1980, Affonso et al 1992, Brunssen and Miles 1996, Shields-Poe and Pinelli 1997).

There were 37 (58%) mothers and 15 (60%) fathers who had warning of their baby's admission. The warning was from midwifery/obstetric/paediatric staff who informed the parents that their baby would probably need NNU care. While there was no identification in the 'study' of high-risk designations, it was expected that parents with a warning of possible admission were more likely to have received prenatal information (Greig 1998). NNU staff indicated that these were the parents who were most likely to visit the NNU prenatally (see section 16.3.1.1).

However fewer than half of these parents, 15 mothers and seven fathers, received information, (see sections 12.1.4 and 12.3.4). There were therefore many 'missed opportunities' for preparation (see section 14.2.1). It was evident that some parents had only minutes or a few hours of warning. In these circumstances, giving information might have been impossible, of low priority, or the parents' receptivity might be reduced (Redshaw et al 1996). Some parents in these circumstances made allowances for the omission, suggesting that they understood the reasons, yet were disappointed. However there were parents who felt aggrieved about the omission, especially if a warning of days or weeks was given. Therefore, included in the implications for practice (see section 18.4.2), will be the suggestion that parents, with a pregnancy or fetus designated as high-risk, could be offered specific information about NNU care, as soon as the high-risk designation is made.

There were 16 (25%) mothers and nine (36%) fathers, who expected their baby to be admitted, whether they had been warned by midwifery/obstetric/neonatal staff or not. Of these, the majority, 10 mothers and seven fathers had received information.

The finding that a minority of parents expected their baby's admission, supports that of Redshaw (1997). As part of a large study of English NNUs (Redshaw et al 1996), a survey of mothers was undertaken to describe their experiences and perceptions of having a baby in NNU (Redshaw 1997). From the multiple choice format questionnaire sent to mothers two months after the baby's discharge, it was found that most had learned of their baby's need for NNU admission during labour or

delivery, with a small number of mothers learning that the baby required NNU care after transfer to the postnatal ward. This was the experience of similar proportions of parents in the 'study'.

When information was given, parents had 'grateful acceptance', (see sub-section 14.2.2). This was particularly true for parents whose pregnancy and/or the fetus had been designated high-risk and their preparation included a tour of the NNU. While not an enjoyable experience, the tour was not frightening for any of these parents and they all found it helpful to their understanding of what would happen after the birth. This finding supports the suggestions of Boxall and Whitby (1983) and Thornton et al (1984), and the findings of Stewart (1989) and Griffin et al (1997).

NNU staff perceived that the tour was beneficial for parents whose pregnancy and/or fetus was designated as high-risk (see section 16.3.1.3). However the experience of staff also suggested to them that some parents were very upset by the visit. NNU staff made suggestions for how the tour should be organized, structured and conducted to try to avoid any additional negative stress for parents (see section 16.3.5.2). The recommendations of Griffin et al (1997) provide a useful guide for the NNU tour and will be included with the suggestions made by NNU staff in the implications for practice from this 'study' (see section 18.4.2).

Parents given prenatal information and/or a tour of NNU suggested that it/they had helped them understand what the NNU was like and what would happen to their baby and to them. The design of the 'study' did not allow for a cause and effect relationship to be determined, however parents perceived that the aspects of NNU care for which they had been prepared were easier to cope with after their baby was admitted. Parents appeared to attribute the emotional benefits they experienced to prenatal preparation for NNU care, suggesting this strategy may be helpful as primary crisis prevention/anticipatory planning. However it was evident that the content of any information or NNU tour varied (see sections 14.2.2 and 16.3.1.2),

and no parent received the full range of topics that was suggested as being appropriate prenatal preparation of parents for NNU care (Greig 1998).

As part of the implications for practice arising from the findings of the 'study' (see section 18.4.2), it will be suggested that when prenatal information and/or a tour of NNU is/are given, all topics recommended in the literature be included. In line with the recommendations of Griffin et al (1997), it will also be suggested that the number of topics discussed at any one time and when they are discussed, should be guided by the parents' individual needs and circumstances. It will also be suggested that any verbal information should be available in a written format for parents.

The findings of the survey (Greig 1998) suggested that midwives used traditional methods of giving information, with few audio-visual media used. In the 'study', parents suggested that the staff who gave them information did so mainly through face-to-face verbal interaction. As discussed above, most parents perceived information about NNU as irrelevant to them until it became obvious that the baby would need NNU care. In these circumstances, they gratefully accepted information and perceived it as being of some benefit to them (see section 14.2.2). Therefore, as the majority of babies are unexpected admissions to NNU, if information could be conveyed to all parents, whether or not the baby is expected to be admitted to NNU, they might benefit in similar ways to the parents in the 'study'. However, the challenge that remains is for the information to be relevant to parents who feel their pregnancy is uncomplicated. This is the challenge that pervades health education programmes and some of the successful strategies might be applicable to prenatal information about NNU care (Crafter 1997). Collaboration with health educators may be productive, but it will be recommended that research be conducted to determine the most appropriate media through which to convey information about NNU care (see section 18.4.3).

NNU staff were usually unable to detect differences in coping between parents who had been given information and those who had not (see section 16.3.4). Questions

arise from this finding including whether parents differ, and if they do, whether they demonstrate behaviours that reflect how they feel, and whether NNU staff are skilled in detection of differences.

Informed parents felt they coped more easily with aspects of NNU care, however not all demonstrated behaviours to indicate this, as evidenced by some incongruity of the quantitative and qualitative measures of anxiety (see chapter 15 and section 17.2). While there are doubts about the reliability of the data generated about anxiety, the relationship between what parents feel and the behaviours they demonstrate could be the focus of further research.

In relation to the skills of NNU staff, the majority had undergone some form of neonatal nursing education (see section 16.1). Because parental support is part of the neonatal nurse's role, there was an expectation that NNU staff would have skills in parental assessment and parent support. The findings suggested this expectation was not met. It is known that the content of neonatal educational programmes varies and that there is a need for a standardized basic programme (Report of working group reviewing neonatal services in Scotland 1997). Therefore there is no assurance that all NNU staff had been educated about parental assessment and parent support skills. It is therefore suggested that the content of neonatal educational programmes include the development of parental assessment and support skill. Assurance that these skills are effectively used in practice could be part of ongoing performance appraisal in the NNU.

17.1.2 Previous experience of NNU

A mother whose previous baby required care in NNU is more likely to have a subsequent baby admitted to NNU (Korones 1986). Therefore it is surprising that no previous research could be located that focused on the previous experience of parents and their subsequent experiences. Kaplan (1961 cited by Caplan et al 1965) did include previous experience as a variable in the study he conducted (see section 5.1.3), but the findings on this aspect were not reported.

Personal experience of NNU was considered in the 'study' as a form of preparation for NNU care. However, some parents identified their experience was via friends or family, and this type of previous experience was also included as preparation. A minority of parents, 19 (30%) mothers and 7 (28%) fathers, had previous experience of NNU.

Of the 37 (58%) mothers and 15 (60%) fathers who had warning of their baby's admission, approximately one third of them, 11 mothers and 5 fathers had previous experience of NNU. Previous experience was considered to be the 'ironic ideal' preparation, especially if it had been personal experience, as was the case with 10 parents (see 14.2.6). Parents with previous experience were familiar with the unit, knew what to expect and knew some of the staff. They perceived themselves to adapt to the admission more quickly and better than on the previous occasion.

NNU staff did indicate that, after the first 24 – 48 hours of admission, some parents with previous experience could be differentiated from parents with no experience. They appeared to be more comfortable with the equipment, their interaction with their baby and their participation in his care than unprepared parents (see section 16.3.4.2).

However parents acknowledged that this 'ironic ideal' preparation did not remove their anxiety experienced in association with having a baby admitted to NNU, although it did help to moderate it. Chernis (1980), Bond (1986) and Sherr (1995) suggested that the experience of a moderate level of anxiety in an anxiety-provoking situation or potential crisis is beneficial to the individual. In the state of moderate arousal, the individual is able to mobilize coping strategies successfully and avoid extreme negative emotions or even crisis. This appeared to be confirmed by some of the parents with previous experience (see section 14.2.6).

Some of the parents had very positive feelings about the baby's admission to NNU, while others did not. It may have been that the former parents were using denial as a coping strategy during the first days after their baby's admission, thus helping them feel positive. Denial is considered a constructive coping strategy in the short-term (Lazarus 1966, Kubler-Ross 1969, Parkes 1972, Bond 1986). However if denial is used exclusively, it can become counter-productive, resulting in prolonged anxiety. Denial blocks the individual's ability to appreciate the situation fully and therefore other coping strategies are not used to enable the individual to continue to work through their feelings, and the anxiety persists (Lazarus 1966, Kubler-Ross 1969, Bond 1986).

To avoid such a prolongation of anxiety, parents with previous experience of NNU could be encouraged to appreciate the benefits of that experience. NNU staff could discuss with parents their feelings and coping strategies during the previous admission and encourage parents to use those strategies to help them constructively cope with the current admission. Gennaro (1986) suggested that parents' anxiety could be seen as a positive motivator to coping, while Mason (1963) and Harper et al (1976) suggested that parents should be encouraged to channel their anxiety to help them cope constructively.

There was no overt evidence that NNU staff were consciously helping parents to channel their anxiety positively, especially as parents' previous experience was usually unknown to the staff. However, NNU staff did indicate that they felt they helped parents to appreciate that the baby was theirs and to become involved in care (see section 16.3.2). If these strategies are successful, then the continuation of parental denial is less likely, and parents can move forward in their coping (Mason 1963, Harper et al 1976, Gennaro 1986).

The experience of at least one mother (m40) suggests that NNU staff did help her to appreciate the benefits of her past experience, although the community midwives involved in her care did not support her in this way (see section 14.4.1). The

community midwives appeared to deny this mother's previous experience and feelings, while the NNU staff acknowledged them. It is possible that the community midwives were using denial as a coping strategy to help them in a situation that they found particularly anxiety-provoking, but m40 perceived that her needs were unmet by these midwives. Had her needs continued to be unmet in NNU, her anxiety might have been increased.

Therefore NNU staff should have skills to help parents channel their anxiety into using the coping strategies that parents have available to them, possibly developed from previous NNU experience, so that they can successfully work through their current experience. The suggestions made in section 17.1.1 about the content of neonatal education programmes and performance appraisal could include helping parents channel their anxiety into constructive coping strategies. However, it may also be appropriate to include such aspects in midwifery educational programmes. In this way midwives can first of all appreciate their own feelings, learn how to appropriately help parents throughout pregnancy and childbearing, and develop these skills in practice. NNU staff can continue to use similar skills with parents if a subsequent baby was admitted to NNU.

17.1.3 Inconsistencies in questionnaire data

In sections 12.1.2.3, 12.1.2.4, 12.3.2.3, 12.23.2.4, 17.1.1 and 17.1.2 it was identified that there were inconsistencies in the questionnaire data from parents in relation to their expectations of the baby's admission, warning of the baby's admission, and prenatal information.

Parents were asked a closed question in the questionnaire as to whether they had expected the baby to be admitted to NNU or not. Few parents reported that they expected their baby to be admitted to NNU. Analysis of the qualitative data confirmed that most parents had considered their pregnancy as uncomplicated and that a healthy baby would be the outcome, i.e. they did not expect the baby to be admitted to the NNU.

However, the follow-up question asked that if parents expected the admission, how long before the baby was born did they know the baby would be admitted. More parents reported that they knew the baby would be admitted than reported expecting the baby's admission, suggesting that there had been misunderstanding of this question and unreliable data had been generated. Therefore, conclusions based on these findings have been cautious and recommendations very limited.

Were the 'study' to be repeated, rewording of the questions would be appropriate so that data would give an understanding of how many parents expected their baby to be admitted prior to receiving any definite information from obstetric, midwifery or NNU staff that the baby would be admitted. A further question could determine how long before the admission, whether or not the parents themselves expected the admission, was information from obstetric, midwifery or NNU staff given.

Parents were asked a closed question as to whether they had been given information about NNU prior to their baby's admission or not. A follow-up question asked parents to identify the source/s of the information from a fixed choice with an 'other – please specify category'. More mothers and fewer fathers indicated the source/s of information than reported they had received prenatal information.

While the interpretation of the findings was based on the data for each question, it is important to consider why the discrepancies occurred. The closed question does have two pre-requisites, during pregnancy and before admission, therefore if some mothers received their information during labour, they may have answered this question in the negative. Simplifying the question to ask if information had been given prior to the baby's admission, would possibly avoid misunderstandings. However as the follow-up question is quite clear as to who should answer it, it is difficult to explain why more mothers did report source/s of information.

It is possible that the fathers who indicated they had been given prenatal information could not remember the source/s and therefore avoided answering the follow-up question. Had a fixed choice of 'cannot remember' been included, this inconsistency may not have occurred.

A pilot study was not conducted in the 'study' because of the inclusion of a qualitative aspect in the design. While the questionnaire was careful constructed, pre-testing may have identified the potential for inconsistencies that could then have been overcome prior to the 'study' being conducted.

17.2 Anxiety

Parental feelings when a baby is in the NNU have been a variable studied in previous studies. However, only five studies that explored the feelings of both mothers and fathers of babies in NNU were located (Harper et al 1976, Jeffcoate et al 1979a and b, Trause and Kramer 1983 and Shields-Poe and Pinelli 1997), and only two of those compared the levels of parental anxiety (Harper et al 1976, Shields-Poe and Pinelli 1997). Harper et al (1976) make their comparisons of what appears to be parental anxiety levels after the admission of the baby, while Shields-Poe and Pinelli (1997) were the only researchers located who made comparisons between trait and state anxiety using the STAI. Therefore, despite the small sample size of the fathers' sample, the findings of the 'study' in relation to mothers' and fathers' levels of anxiety measured by the STAI, will add to the findings of Shields-Poe and Pinelli (1997) as the basis for understanding of this area. Further research can be conducted from this basis.

The 'study' appears to be the first exploration of parental preparedness for NNU care in relation to several variables, including anxiety, therefore the findings provide an initial understanding, and the basis from which further research can be conducted.

The sample mothers and fathers had levels of trait anxiety similar to those expected in working adult women and men (Spielberger et al 1983), confirming the findings

of Shields-Poe and Pinelli (1997). When preparedness was considered, there was no significant difference between the trait anxiety of prepared and unprepared mothers (see section 13.1.1). This confirmed the assumption that preparation for NNU care was unlikely to influence trait anxiety.

The finding that unprepared fathers had significantly higher trait anxiety than prepared fathers ($p = <0.05$)(see section 13.2.1) was therefore surprising. Also surprising were the findings that prepared mothers had significantly higher trait anxiety than prepared fathers ($p = <0.01$), and unprepared fathers had higher trait anxiety than unprepared mothers ($p = <0.05$) (see section 13.3). The small sample numbers may have influenced these interesting findings, however the gender differences of trait anxiety and preparedness in this population may be the focus of further research.

However a very important factor to consider is that measuring trait anxiety using the STAI may be unreliable in this population. This is more fully discussed in sections 13.1.3, 13.2.3 and below, but the need to test the reliability and validity of the tool in future research with postnatal parents of babies in NNU is evident.

The majority of parents, 65 (74%), had low trait anxiety. There were no significant differences in the proportions of prepared and unprepared mothers and fathers in low, moderate and severe anxiety categories, as defined by Spielberger et al (1983) (see section 13.3).

As expected the state anxiety levels of parents were higher than the normative levels provided by Spielberger et al (1983) (mothers $p = < 0.01$, fathers $p = < 0.05$) (see sections 13.1.2 and 13.2.2). These findings support that of Blumberg (1980), Gennaro (1986 and 1988) and Shields-Poe and Pinelli (1997), although the findings of Blumberg and Gennaro related only to mothers. These findings were expected because the normative scores were generated in non-stressful conditions (Spielberger et al 1983).

In the 'study', there were no significant differences between the state anxiety levels of prepared and unprepared parents (see section 13.3). The state anxiety scores were independent of the type of preparation mothers and fathers had experienced or not, with one exception. Mothers with previous experience had a significantly lower mean state anxiety score than mothers given prenatal information ($p = <0.05$) (see section 13.1.2.2). These findings suggest that state anxiety levels were independent of any preparation for NNU care, except for mothers given prenatal information, and are contrary to the expectation that preparation for NNU care would moderate parental state anxiety.

The lack of difference between the mean state anxiety scores of prepared and unprepared mothers and fathers, and those prepared in different ways, conflicts with the findings of Harper et al (1976) and Shields-Poe and Pinelli (1997). Both these groups of researchers found that mothers had higher state anxiety scores than fathers after the baby was admitted to NNU.

Comparison of the trait and state anxiety scores revealed a significant positive relationship for mothers ($p=<0.05$), confirming the expectations of Spielberger at al (1983) and the findings of Blumberg (1980) and Shields-Poe and Pinelli (1997). However this relationship was not evident in respect of fathers, as their state anxiety score was found to be independent of their trait anxiety score. When preparedness was taken into account, the positive correlation was confirmed for prepared mothers ($p=<0.05$), but not for unprepared mothers or fathers, or prepared fathers, where no significant relationship between preparedness and anxiety *scores* were demonstrated (see sections 13.1.3.1 and 13.2.3.1).

Preparation for anxiety-provoking events has been shown to moderate feelings of anxiety (Parkes 1975, NAWCH 1990, Oetler-Black 1993), resulting in the conclusion that primary crisis prevention/anticipatory planning is an appropriate strategy (Janosik 1994). Using the theoretical framework for the 'study' (see

chapter 5), the expected relationship between preparation and anxiety was assumed to be a negative correlation. Therefore the positive correlation found only between the trait and state anxiety levels of prepared mothers is somewhat surprising and the reasons for it unclear. Also, if prepared mothers with high trait anxiety are more likely to have high state anxiety, it is unclear why prepared fathers do not demonstrate a similar relationship. These findings warrant further study, assuming other factors, discussed below, are taken into account.

Whereas most parents had low trait anxiety, when the levels of state anxiety were divided according Spielberger et al's (1983) categories, the majority had moderate state anxiety. There were also more parents in the severe state anxiety category than in the severe trait anxiety category. Both these findings indicate differences between the trait and state anxiety levels. However when the differences between trait and state anxiety levels were compared, there was no difference for the majority of parents, 49 (56%), using the level of difference defined for the 'study' (see definitions and section 8.2). There were 35 (40%) parents who were more anxious and 4 (4%) mothers who were less anxious (see section 13.3).

The findings that some parents' state levels of anxiety showed no difference or little difference from their trait levels were surprising. Caplan et al (1965) concluded that the admission of a baby to NNU provoked anxiety in mothers/parents, and subsequent studies have confirmed these findings (Choi 1972, Harper et al 1976, Jeffcoate et al 1979 a and b, Blumberg 1980, Trause and Kramer 1983, Gennaro 1986 and 1988, McHaffie 1987 and 1990, Pederson et al 1987, Gennaro et al 1990, Gennaro and Stringer 1991, Shields-Poe and Pinelli 1997).

Consideration has been given as to the possible reasons for the findings in the 'study', i.e. the lack of difference between trait and state anxiety, or a lower state than trait anxiety (see sections 13.1.3, 13.2.3 and 15.4). For completeness, a summary is included in this section.

Lazarus (1966) suggested that an individual's perceptions influenced whether he regarded a situation as stressful/anxiety-provoking or not. Therefore some parents may have perceived the admission of their baby to NNU as not anxiety-provoking, resulting in no difference between trait and state anxiety scores or a state score that was less than the trait score. Analysis of the qualitative data confirmed that a few parents were pleased that their baby was in the NNU and did not find the situation anxiety-provoking (see section 14.1.1).

Caplan et al (1965) suggested that the admission of a baby to NNU could be a crisis for parents. None of the parents used the word crisis to describe how they were feeling, but most parents did acknowledge that they felt anxious to some extent (see section 14.1.1). However, denial is a valuable strategy for short-term use to block the most severe of negative feelings until they can be coped with (Lazarus 1966, Kubler-Ross 1969, Parkes 1972, Bond 1986). Therefore the parents with no difference or state anxiety that was lower than their trait anxiety may have been using denial to help them cope with the situation of their baby's admission to NNU.

However, the main factor to influence the interpretation of the findings was the doubt about the STAI data. The STAI was chosen as an appropriate tool for the 'study' (see section 9.1.2.7). Spielberger et al (1983) reported its established reliability and validity. The STAI had also been used in studies of similar populations and so would facilitate valid comparisons (Blumberg 1980, Gennaro 1986 and 1988, Shields-Poe and Pinelli 1997). It was relatively simple to administer (Spielberger et al 1983), and it measured only anxiety. Other tools were discounted mainly because they measured depression alone, or depression and anxiety, or general signs including anxiety, or did not allow for measurement of trait and state anxiety (see section 9.1.2).

However during the data generation phase of the 'study', a study by Hundley et al (1998) was published that concluded the STAI may be an unreliable, invalid tool to use with postnatal women (see section 15.4). The reliability of the test-retest trait

scores of their sample was questioned, and they surmised that if there were doubts about the reliability of the trait scores, then the state scores might also be unreliable. Therefore the calculations and conclusions based on STAI results in the 'study' could also be questioned and the validity of the findings affected.

While it is necessary to report the findings from the STAI, these cannot be confidently generalised and therefore only limited recommendations can be made. More research is required to establish whether the STAI is a reliable and valid tool to use with populations of postnatal parents, especially those parents whose baby is admitted to NNU. Depending on the findings of such a study, further research of this population of parents could be undertaken.

When the findings of the qualitative and quantitative data were compared, congruity and incongruity were evident (see chapter 15). The majority of comparisons that were made were congruous, 47 of 64 mothers and nine of 11 fathers, strengthening the reliability of the tools and the parental assessment abilities of the 'researcher' and the NNU staff. However the remaining comparisons indicated some incongruity between the data sources, reducing confidence in the reliability of the tools and the parental assessment abilities of the 'researcher' and the NNU staff.

Parents may or may not have demonstrated to the 'researcher' or to the NNU staff verbal and non-verbal behaviours that matched the anxiety suggested in the STAI analysis (see chapter 15). McHaffie (1987 and 1990) found that mothers were able to convince NNU staff that they were ready to take their baby home, when they were not at all ready. She concluded that this ability to deceive staff supported previous research findings with other populations. Therefore it may be that the parents in the 'study' were demonstrating similar skills, or that they were disguising their anxiety with the strategies they were using to cope with their experiences (Parkes 1972, Lazarus 1966, Kubler-Ross 1969).

The incongruous findings could also have been due to the unreliability of the data from the questionnaire completed by NNU staff, due to faulty recall and/or staff reporting their perceptions of their practice rather than the reality of their practice (see sections 16.2 and 17.3). Alternative strategies for confirming the quantitative data reported by NNU staff were not part of the design of the 'study', but could be incorporated into the design of future studies.

The parental assessment skills of the 'researcher' could also be questioned. However the objective guidance of the Brief Anxiety Scale (Tyrer et al 1984) was used by the 'researcher' as an informal guide the assessment of all parents, reducing the subjectivity of the assessments, strengthening the reliability of these qualitative data.

The incongruous results further suggest that the STAI might not be giving reliable or valid measures of anxiety. While the STAI is not a tool for use by NNU staff at the cot-side, it is important that NNU staff ensure they have adequate skills in parental assessment and support (see section 15.4). However, due to the possibility of unreliable data, recommendations based on the findings will be limited.

17.3 Parental needs

Analysis of conversations and interviews with parents indicated that parents knew what they needed/wanted in relation to pregnancy, birth and in the first days after their baby's birth. Most parents wanted these experiences to be uncomplicated, with a healthy baby born at term, transferred with the mother to the postnatal ward, and cared for by the parents. They were very disappointed when this did not occur (see section 14.1.2). Even when parents expected their baby to be admitted to NNU, their hopes were that it would not occur.

This parental perception of the uncomplicated nature of pregnancy and childbearing is one that has emerged many times during the 'study' (see sections 14.2.3 and 14.2.4). Midwives conveyed this view when surveyed (Greig 1998), confirming the

general societal view (Sweet, 1988, DeVries 1996). NNU staff also suggested this was their perception (16.3.1.3 and 15.3.5.1).

While it is evident from statistics that pregnancy and childbearing are usually uncomplicated (Scottish Health Service Statistics 1994), the same statistical source indicates that complications do occur, pregnancies are designated as high-risk, and babies do require care in NNUs. Therefore the virtual denial of potential complications until it is shown that complications are inevitable, may be detrimental to the emotional and physical health of the fetus/baby and his parents (Oakley 1979, Klaus and Kennell 1982, Korones 1986, Hillan 1992b). De Vries (1996) argues that the persistence of the view that childbearing is uncomplicated is also potentially detrimental to the profession of midwifery.

However, once the baby was born and admitted to the NNU, parents clearly identified what they needed. They needed immediate contact with their baby at birth and then to see him again in the NNU as soon as possible. This confirms the findings of Klaus and Kennell (1982). For some parents there was 'thwarted first contact' or 'frustrating delays' to contend with. Even if parents were given explanations when delays occurred, they were disappointed and some appeared agitated about not being able to have their needs met, possibly increasing the levels of anxiety (see sections 14.3.1 and 14.3.2). Therefore the implications for practice from the 'study' will include the suggestion that staff reduce the incidence of avoidable delays and provide warnings and/or explanations of unavoidable delays (see section 18.4.2.2).

Parents also wanted to begin to care for their baby as they had expected (Duvall 1977), despite the fact they were in NNU. Previous researchers do not appear to have specifically considered parental needs in relation to parenting their baby. McHaffie (1987) did indicate that parents benefited from undertaking parenting tasks with their baby as soon as possible after the baby's admission and others have

suggested the importance of holding and giving care (Benfield et al 1976, Harper et al 1976, Jeffcoate et al 1979a and b, Affonso et al 1992).

For most parents, interaction with and participation in, the care of their baby was a gradual process of 'hesitant caring'(see section 14.3.3). Most appeared to follow the pattern suggested by Klaus and Kennell (1982) in relation to seeing, sitting with, touching, and holding their baby. Most parents could have all the contact they needed with their baby, except to hold him. For many parents, the 'need to hold' their baby was almost overwhelming, and some indicated that this was the only thing that would make the situation they found themselves in, real for them. Therefore they were again disappointed that this aspect of their needs could not be met. Even parents who were prepared were frustrated about not being able to hold their baby (see 14.3.4). The feelings the parents expressed were confirmed in the quantitative analysis, where holding their baby was an important variable (see sections 13.1.2.3 and 13.2.2.3).

Mean state anxiety scores were specifically examined in relation to whether the parents had held their baby prior to participation or not, and the type of preparation or not they had experienced.

Significantly or very significantly lower mean state anxiety scores were found for;

- mothers who had held their baby versus those who had not held,
- mothers who were prepared and had held versus those who were prepared and had not held,
- mothers who were prepared and had versus those who were unprepared and had held,
- mothers who had previous experience and had held versus those who had previous experience but had not held,
- mothers who had no previous experience and had held versus those with no previous experience who had not held,

- mothers given prenatal information and had held versus those given prenatal information who had not held,
- mothers given no prenatal information who had held versus those given no prenatal information who had not held.

There were no significant differences between the mean state anxiety scores of mothers with previous experience or not who had held their baby, and between mothers who had prenatal information or not who had held their baby (see sections 13.1.2.3 and 13.4.1).

Significantly or very significantly lower mean state anxiety scores were found for:

- fathers who had held their baby versus those who had not,
- unprepared fathers who had held versus unprepared fathers who had not held, unprepared fathers who had held versus prepared fathers who had held,
- fathers with no previous experience who had held versus fathers with previous experience who had held,
- fathers with no previous experience who had held versus fathers with no previous experience who had not held,
- fathers given no prenatal information who had held versus fathers given no previous experience who had not held
- fathers given no prenatal information who had held versus fathers given prenatal information who had held.

There were no significant differences between the mean state anxiety scores of prepared fathers who had held their baby or not, between fathers with previous experience who had held their baby or not, and between fathers who had prenatal information who had held their baby or not (see section 13.2.2.3 and 13.4.2).

Comparing these findings, gender differences were suggested in relation to preparation, holding and mean state anxiety scores. Prepared mothers who had held

their baby had a very significantly lower mean trait anxiety score than prepared mothers who had not held, whereas there was no significant difference for fathers. Prepared mothers who had held had a significantly lower mean state anxiety score than unprepared mothers who had held, whereas prepared fathers who had held had a significantly higher mean state anxiety score than unprepared fathers who had held.

Mothers with previous experience who had held had a significantly lower mean state anxiety score than mothers with experience who had not held, whereas there was no significant difference for fathers. Fathers with previous experience who had held had a significantly higher mean state anxiety score than fathers with no experience who had held, whereas there was no significant difference for mothers.

Mothers given prenatal information who had held had a significantly lower mean state anxiety score than mothers given prenatal information who had not held, whereas there was no significant difference for fathers. Fathers given prenatal information who had held had a significantly higher mean state anxiety score than fathers given no information who had held, whereas there was no significant difference for mothers.

Holding, previous experience and/or prenatal information appear to be associated with lower state anxiety in mothers, confirming the findings from the qualitative data. However for fathers, higher state anxiety scores are more likely to be associated with fathers who have previous experience and/or prenatal information and who had held their baby. Therefore the findings from the qualitative and quantitative data appear contradictory.

Based on the possible unreliability of the STAI data, these findings are interpreted cautiously. However the findings from the quantitative data analysis related to the importance to mothers of holding their baby appear to confirm the analysis of the qualitative data. These findings support those of Klaus and Kennell (1982),

McHaffie (1987 and 1990) and Bass (1991) that holding their baby is very important to mothers fulfilling their early parenting role. Because this finding supports that of other studies, there is justification for making a limited recommendation that mothers should hold their baby as soon after birth as the baby's condition will allow (see section 18.4.1).

The possible association between higher mean state anxiety, holding and types of preparation in fathers requires to be further explored before any conclusions can be reliably drawn.

It was clear that NNU staff perceived parents' needs for contact, holding and caring (see section 16.3.2). NNU staff reported the number of times parents had contact with their baby, the nature of the contact, and the encouragement they gave parents to achieve the contact. These data confirmed that usually staff correctly perceived the needs of parents and responded to them (see section 16.2). Most parents were able to have most forms of contact with their baby in the first 48 hours, although holding and participating in care were aspects that were not possible for some parents. Indeed the majority of NNU staff indicated that parents had not held or participated in the care of their baby by 48 hours.

While faulty recall of these NNU staff may have contributed to this finding (Robson 1993), the clinical dependence of the sample babies is a more likely reason (see section 12.4.1). Reid et al (1995) conducted a study of Scottish neonatal units as part of a European multi-centre study of parental involvement in NNU. Using a complex three stage quantitative design, parents, medical and NNU staff were surveyed. One of the findings Reid et al (1995) reported was that the more ill the baby was, the less involved parents were in his care, confirmed by the similar finding in the 'study'.

There were eight (10%) staff members whose data disagreed with the parents' data in relation to holding the baby within 48 hours of admission. This may have been

due to faulty recall (Robson 1993), however the possibility that NNU staff may have incorrectly reported what they actually did in clinical practice was also considered.

In a study of midwives in labour wards, Kirkham (1989) found that midwives perceived themselves to give information to women in labour openly and honestly, using communication skills well. However Kirkham's structured observations of the midwives revealed that their practice was quite different, in that they often blocked women's requests for information and did not use the communication skills they reported themselves to use. No evidence could be located that reported similar findings in respect of NNU staff.

The majority of the participating NNU staff, 90%, reported practice that concurred with the parental data. Also the majority of the NNU staff, five, whose data disagreed with that of the parents in relation to holding, reported that the parents had not held, whereas the parents had held the baby. Because holding the baby is an important part of early parenting (Klaus and Kennell 1982), if these five staff had wished to present their practice most positively, it is more likely that they would have reported that the parents had held their baby, when they had not. However, it could be argued that this was the ploy of the three NNU staff members who did report that parents had held their baby when they had not.

Therefore, the doubts about the validity and reliability of these data from NNU staff remain, and further research is needed into this aspect of the practice of NNU staff. However, the data from the 'study' suggest that faulty recall was probably the reason for these discrepant findings.

Nevertheless, the impact of the delays in holding and caring for their baby on the parents must be considered by NNU staff in their support of parents (Klaus and Kennell 1982). Included in the implications for practice from the 'study' will be the need to reduce the delays and/or use alternative strategies if possible to help parents become involved in their baby's care (see section 18.4.2.2).

When invited/encouraged by NNU staff to interact with their baby and participate in care, some parents were initially reluctant to do so. They cited the reason that they were frightened they would do harm to their baby. This protective role of the parent (Duvall 1977) appeared to be more important than the parents' needs at that time, countering the view of Caplan et al (1965), that the mother focussed on her own needs to the exclusion of the baby initially. However, Harper et al (1976) reported that such involvement was very anxiety-provoking for parents, and this may have been the case for the parents in the 'study'.

17.4 Preparation and meeting parental needs

Because many of the sample parents held the view that pregnancy and childbearing were uncomplicated, they regarded prenatal preparation in the form of information, as potentially frightening and/or irrelevant to them. Therefore they paid little or no attention to any information about NNU until the admission was considered probable. Then, if there was time, some parents were given information and/or tour the NNU, for which they were grateful. Quantitatively, there were no significant differences in mean state anxiety scores for mothers and fathers given prenatal information or not. Qualitatively parents indicated that prenatal information helped them cope better with aspects of their situation after the baby was admitted than they thought they might have if they had not been given the information (see section 14.2.2). These parental perceptions confirm the suggestions of Caplan et al (1965), Lazarus (1966) and Janosik (1994) that primary crisis prevention/anticipatory planning can be beneficial. However, the assumption that these parents would be less anxious than parents not given information was not confirmed in the analysis of quantitative data (see section 13.1.3.2 and 13.2.3.1).

For some parents there was no time for information to be given, or the admission was completely unexpected, and some of the parents felt they had 'missed out', not

having had the 'limited benefit' they suggested the information might have given them (see section 14.2.1). However some parents thought that it was unlikely that anything could have prepared them for the admission of their baby to NNU and what they experienced.

Parents who had been given information and/or a tour of NNU indicated that they had learned about what would happen at the birth, where the baby would go and what his problems were likely to be (see section 12.1.5 and 12.3.5). During the tour of NNU, most staff indicated that they tried to show parents a baby of the equivalent gestation to theirs, however NNU staff indicated that even with preparation, many parents were surprised by the size of their baby. While parents did not indicate on their questionnaire that they had received information about equipment in NNU, they did indicate in conversation or interview with the 'researcher' that they had received information about equipment. They found this information was particularly helpful to them after the baby was admitted to NNU, because they could concentrate on their baby without having to worry about the equipment (see sections 14.2.2 and 14.2.5).

The factors about which parents indicated they had information were some of those shown to be negatively stressful to parents (see section 4.1). However there are many more factors that are negatively stressful to parents (see section 4.1) and midwives have indicated that they included many more topics in the information they gave to parents (Greig 1998). NNU staff also suggested that they included many more topics in the information they gave to parents during the NNU tour (see section 16.3.1.2).

The validity and reliability of the data from midwives and NNU staff has been discussed (see section 17.3), and this may also have been a factor influencing this finding. There was no opportunity within the 'study' design to compare what information parents were actually given with what information they could recall. However, it has been suggested that mothers hear/understand very little of what is

said to them around the time of birth and in the postnatal period, particularly mothers of preterm babies (Redshaw et al 1996, Calam et al 1999). Therefore the sample mothers may have been demonstrating this. There are no previous findings to suggest that fathers have a similar pattern of partial recall and understanding, although in a review of the literature, Ley (1988) found that selective recall and understanding was a phenomenon of patients in general. Future research designed to explore fathers' recall and understanding around the time of birth would provide a deeper understanding of this phenomenon.

The study by Calam et al (1999), part of a larger project, was designed to determine how much mothers recalled and understood of the information given to them around the time of their preterm baby's birth. However, the data generation took place 12-24 weeks following the birth, when parents were asked in a semi-structured interview, to recall information given to them around the time of the birth. This time lapse is likely to have had an additional influence on parents' recall (Robson, 1993). Therefore in a future study, data generation nearer to the birth could be considered.

None of the parents indicated they were given written information at the time of the verbal interaction/NNU tour. Written information would offer parents the opportunity to read about aspects of NNU care in which they were particularly interested at their own pace, reinforcing verbal information and possibly increasing their recall and understanding. This is recognized as a valuable educational strategy (Quinn 1995), and was one recommended by Griffin et al (1997) and Calam et al (1999). Film/video or electronic media could also be offered as sources of reliable, reinforcing, information on specific topics. Midwives had reported effectively using a video of NNU in their preparation for parenthood classes, although the study design did not allow for determination of how the parents had reacted to this strategy (Greig 1998).

Most of the parents' needs were related to their parental role. Parents indicated their need to care for their baby as they had expected, to see their baby, to have him with

them, to hold him, to provide care for him (see section 14.3). For many parents, some of these needs were not met and their role varied, and they were unsure of their altered role. Parents felt that the prenatal information they received did not prepare them for this altered role. This finding confirms what NNU staff indicated, in that they gave little information about the altered parental role during the tour of NNU (see section 16.3.1.2). The finding conflicts with what midwives indicated they included in the information they gave parents (Greig 1998). However, selective recall and/or unreliable data may also have influenced this finding. Griffin et al (1997) recommended that more information about the role of parents in the NNU should be included in the NNU tour. This would also be included as one of the implications for practice from this 'study', but with the proviso that written information is also given about this and the other topics included in the information-giving (see section 18.4.2.1).

Previous experience of NNU was categorised as the 'ironic ideal' form of preparation (see section 14.2.6). Mothers with previous experience had a significantly lower mean state anxiety score than mothers given prenatal information. The mean state anxiety score of fathers with previous experience was independent of that experience. Parents with previous experience had needs similar to those of unprepared parents (see section 14.3), but because many had personal experience of the altered parental role, they knew more of what they would be able or not able to do with their baby. Parents indicated they were also more familiar with the equipment and the NNU environment. This was a difference that NNU staff *reported they* could detect in parents after the first 24-48 hours (see section 16.3.4.2). Previous experience appears to be a type of preparation that does meet the needs of parents in relation to their parental role. As no literature could be located that reported on the influence of previous experience in relation to parents whose baby is in NNU, a qualitative approach to this aspect of preparation was undertaken in the 'study' (see section 6.1.2.3). The finding provides a basis on which further research can be conducted.

In contrast to their prenatal preparation, parents indicated that the information, support and guidance they received from NNU staff after admission, met their needs (see section 14.4.1). Generally they felt informed about their baby, their role, and the NNU. Both prepared and unprepared parents appeared to view NNU staff positively in the postnatal period, with praise for the care NNU staff had offered them and their babies (see section 14.4.2). Concern has been expressed by other researchers that parents may be too frightened to express negative views of staff while the baby was still being cared for in NNU (Miles 1989, Affonso et al 1992, Wereszczak et al 1997). However Shields-Poe and Pinelli (1997) generated data while babies were still being cared for in NNU, and reported that the parents expressed negative views of NNU staff in that they had been a source of stress. It was also reported that, along with other variables, parents who had sicker babies and higher levels of trait anxiety were more likely to report negative relationships with NNU staff (Shields-Poe and Pinelli 1997).

The design of the 'study' did not allow for direct contrast of variables and parents' perceptions of NNU staff. However a review of the data related to the mothers illustrating the category of 'NNU staff are good, but ...' (see section 14.4.2), revealed that the trait anxiety levels of the mothers ranged from 25 – 48, i.e. within the low and moderate categories (Spielberger et al 1983). The babies of all these mothers required intensive care, and the majority required level 1 intensive care. While expressing reservations that they wanted their baby to be with them and not in the NNU, most of these mothers praised the NNU staff. Therefore the findings of the 'study' align with the views of Miles (1989), Affonso et al 1992, and Wereszczak et al (1997), rather than with those of Shields-Poe and Pinelli (1997) in relation to parents expressing positive views about NNU staff when the baby is still a patient in NNU.

Raeside (1997) conducted a study of 12 mothers and 12 neonatal nurses using qualitative and quantitative approaches to explore maternal and infant stress in the NNU environment and the perceptions of neonatal nurses about what was stressful

for parents. Although conducted at a different time, the research was undertaken in the same NNU as the 'study'. The semi-structured interviews were conducted more than 48 hours after the baby's admission, but no precise time of the interviews was indicated.

Mothers of babies less than 1500 grams reported communication with doctors as stressful, and neonatal nurses perceived such communication to be stressful to mothers regardless of the baby's weight. There was no indication of whether mothers found communication with neonatal nurses to be stressful or whether neonatal nurses perceived their communication with mothers to be stressful. The researcher was a neonatal nurse and this may have influenced the data parents and staff offered (Robson 1993). Raeside's (1997) findings from her small descriptive study were contradicted in the 'study', as the communication with doctors was generally praised and there was little indication that the content of the information was stressful for the parents (see section 14.4.1).

17.5 Perceptions of NNU staff about required parental support in the first days after the baby's admission

Parents had not indicated information as one of their needs after the baby was admitted to NNU, focussing more on their need for contact with their baby. However research has confirmed that information is one of the key needs of parents (Farrell and Frost 1992, Redshaw et al 1996).

NNU staff generally perceived that in the initial days after admission, parents needed information. The aspects of information that were thought of most importance to parents were the baby's characteristics such as weight and length, his condition, his treatment, his outcome, their parenting role with their baby, and the equipment being used with his care. Information about the NNU and the routine were also thought by staff to be helpful to parents. These are factors that many

researchers have recommended that NNU staff discuss with parents (Harper et al 1976, Blumberg 1980, Miles 1989, Affonso et al 1992, Brunssen and Miles 1996, Shields-Poe and Pinelli 1997). The finding that parents generally praised the information they received from NNU staff suggests that parents were being given the information they required and therefore did not perceive the need for more information.

Klaus and Kennell (1982) made recommendations about ways in which parents could interact with their baby, even when the baby was in NNU. NNU staff felt that they facilitated parents being with their baby and interacting with him as soon as possible after admission, allowing for the baby's condition. Therefore, through their descriptions of how they encouraged parents to interact with their baby, the 'researcher' concluded that they were following Klaus and Kennell's (1982) recommendations.

It was evident in the focus group interactions that NNU staff accurately perceived how keen parents were to hold their baby (see section 16.3.2.1). They acknowledged that as soon as holding the baby was possible, NNU staff encouraged the parents to do so. However the NNU staff did express reservations that the baby had to be physiologically stable before holding by parents was contemplated, because if the baby reacted negatively to the experience, parents became even more anxious and were then reluctant to try holding the baby again. This reaction by parents is related to the roller-coaster pattern of emotions that parents experience throughout the NNU stay (Allen 1995a).

NNU staff reported that they also encouraged parents to participate in their baby's care as soon as possible, within the limits of the parents' wishes and the baby's condition. Parents agreed with this when they described their staged introduction to participating in care, categorised as 'hesitant caring' (see section 14.3.3). Some parents did not feel that they performed the care-giving well and felt intimidated in the presence of NNU staff and even resented them because they were looking after

the baby and the parents felt this was their responsibility. These perceptions were reported in previous studies and reviews (McHaffie 1987, Wereszczak et al 1997, Siegel et al 1998)

Some NNU staff were aware that they might be intimidating to parents, although more staff perceived that the parents' reluctance was due to their fear of the baby. Some parents were initially fearful of their baby in relation to size and the wires and tubes that were attached to him, and the apparent fragility of the baby. These factors are recognised as being anxiety-provoking for parents (Kaplan and Mason 1960, Harper et al 1976, Blumberg 1980, McHaffie 1987 and 1990, Miles 1989, Affonso et al 1992, Brunssen and Miles 1996, Shields-Poe and Pinelli 1997, Redshaw 1997).

While many parents slowly became involved in care, NNU staff also felt that parents who wanted to and were able to move at a faster pace, were enabled to do so, within the limits of safety (see section 16.3.2.2). Meeting the individual needs of parents is also acknowledged as important (Wyly 1995c, Siegel et al 1998).

From the analysis of the focus group data it was evident that NNU staff were unaware of the preparedness of parents. There was no clear mechanism where the preparedness of parents was documented or communicated to NNU staff prior to the parents' first visit to the NNU after the birth. Only if NNU staff had escorted parents on their tour of NNU or recalled them from a previous admission, were NNU staff aware of the parents' preparation. The studies by Stewart (1989) and Griffin et al (1997) failed to emphasize the importance of documentation of this preparation. However it is the responsibility of any nurse or midwife registered with the UKCC to maintain contemporaneous records of care (UKCC 1993b). Preparation for NNU care given by a nurse or midwife therefore requires to be recorded, and clearly a reminder of this requirement is needed *locally*. However preparation can be given by other means, where there is no compulsion to document it. Therefore a more specific, inclusive mechanism requires to be devised so that the NNU staff are aware of the parents' preparedness.

Without awareness of any parental preparation, NNU staff reported that they offered information, encouragement and facilitation to all parents according to their needs (see section 16.3.4.2). However, parents who were prepared indicated that this could involve some repetition of information, but they did not mind the repetition. While repetition is a useful educational strategy (Quinn 1995), appropriate interventions are based on a full and accurate assessment of needs (Aggleton and Chalmers 1986). If the assessment is incomplete, then the interventions may be inappropriate, and aspects of support omitted. NNU staff indicated that they did not usually ask the parents if they were prepared or not during an initial visit of the parents to NNU. If an appropriate means of knowing the parents' preparedness was established, *as suggested above,* formal assessment by NNU staff would not be required.

This discussion leads directly to the conclusion in the following chapter, chapter 18.

Conclusion

Chapter 18

Introduction

In this chapter, conclusions are drawn from the findings reported in chapters 12, 13, 14, 15 and 16. The limitations of the 'study' are summarized and ways of overcoming these are also given. Because of the limitations of the 'study', generalisation from the findings is restricted, and only limited recommendations based on the conclusions are justifiable. However, implications for practice can be suggested and further research is recommended.

In the first section of the chapter, the conclusions are presented as answers to the research questions (see section 1.5.2), with each question used as a heading for the five sub-sections. Where relevant, there is also a summary of the discussion in chapter 17 related to each of the conclusions. Suggestions for further research, implications for practice and any limited recommendations based on the conclusions are included in the sub-sections.

Conclusions were also made in relation to the research objectives (see section 1.5.3), and these are presented in the second section of the chapter, with each objective used as a heading for the three sub-sections.

Throughout the thesis, the limitations of the 'study' have been identified and discussed, therefore in the third section of the chapter these limitations will be summarized. Measures to overcome the limitations are included, and suggestions for consideration in future research are made.

In the final section of the chapter is divided into three in which the implications for practice, the limited recommendations from the conclusions of the 'study', and the recommendations for further research are listed respectively.

The design of the 'study' did not allow for cause and effect relationships to be determined between the variables of interest, therefore there is no intention to imply

cause and effect in relation to any of the quantitative findings in the conclusions. However if parents qualitatively acknowledged that they perceived a cause and effect relationship between any of the variables, this is identified.

Because this is a chapter summarizing the 'study', all aspects have been addressed fully in previous chapters. Therefore for ease of reading and understanding in the numbered sections in this chapter, few specific figures will be used, no cross-referencing to sections outwith the chapter will be given and the use of literature citations will be minimal.

18.1 Conclusions as answers to the research questions, with limited recommendations, implications for practice, and suggestions for further research

Introduction

In this section, the five research questions will be answered in the form of conclusions based on the findings presented in chapters 12 to 16. There are five sub-sections, each headed by a research question. Within each sub-section, the main conclusions are highlighted and explained. The limited recommendations, implications for practice, and suggestions for further research based on the conclusions are included in each sub-section, where relevant.

18.1.1 What prenatal preparation about NNU care have parents experienced?

18.1.1.1 A minority of participating parents experienced prenatal preparation for NNU care.

Prenatal preparation for NNU care was defined for the purposes of the 'study' as prenatal information and/or tour of NNU, and/or previous experience of NNU. There were 19 (30%) mothers and seven (28%) fathers who had previous experience of NNU. There were 18 (28%) mothers and nine (36%) fathers given prenatal information. There were 28 (44%) mothers and 12 (48%) fathers who had one or other form of preparation or both forms, and were therefore considered prepared. It is concluded that slightly less than half of the parents were prepared for their baby's admission to NNU. Therefore the majority of participating parents were unprepared for their baby's admission to NNU, 35 (56%) mothers and 13(52%) fathers.

The lack of prenatal preparation for NNU care found in the parents could be attributed to the fact that, for the majority of them, there was no expectation that the baby would require NNU care until immediately prior to the admission. However 37 (58%) mothers and 15 (60%) fathers acknowledged some expectation of their baby's admission. The majority of these parents, 20 mothers and 9 fathers, were prepared for NNU care and they indicated this had been helpful to them coping postnatally. Of the unprepared parents, 13 mothers and five fathers had only minutes or a few hours warning, but six mothers and one father had days or weeks warning that, when born, the baby would be admitted to NNU, yet they had no type of preparation for NNU care during the waiting time. No explanation for these 'missed opportunities' was discernable from the data, and some parents were aggrieved at the omission. These parents suggested that prenatal information about NNU care and/or a prenatal tour of NNU might have helped them cope better with their postnatal experiences of NNU.

An implication for clinical practice from this finding is that, when there is an expectation that the baby will require NNU care, and certainly when a high-risk status is conferred, any basic prenatal information (see 18.1.1.2) could be supplemented by more specific information related to the individual baby, and a prenatal tour of NNU could be offered. The extent and nature of this additional preparation will depend on the time available after the expectation is established and/or the high-risk status is conferred, and the baby is born, and the parents' choice.

18.1.1.2 One type of prenatal preparation parents received was information about aspects of NNU care and/or a tour of NNU

The majority of midwives who participated in a survey, had indicated that prenatal preparation for NNU care, in the form of prenatal information and/or a tour of NNU, was given to most parents during pregnancy. Parents whose fetus and/or pregnancy was designated as high-risk were most likely to be given this preparation. Therefore the expectation in the 'study' was that most parents, and particularly those with a high-risk designation, would have received prenatal information about NNU care, possibly including a tour of NNU. However, it is concluded that only a minority of the participating parents, 18 (28%) mothers and nine (36%) fathers, experienced prenatal information about NNU care and/or a tour of NNU.

The source of the information for the parents was most often midwives, although neonatologists were also acknowledged as a source. The information included what would happen at the birth, where the baby would be taken, and what problems there were likely to be. Because of the circumstances in which the information was given, most of the information was specific to the baby. Parents were given prenatal information from sources other than the midwife or neonatologist, including the obstetrician, family and friends, and the media. They acknowledged that the information about NNU care from these sources was more general, rather than being specific about their baby. Parents indicated that the information was usually

delivered through verbal interaction, although some written material and the television were also cited.

The factors included in the information were some of those identified as potential negative stressors for parents. Giving information about such negative stressors is considered a primary crisis prevention/anticipatory planning strategy. This strategy is aimed at making parents more familiar with the situation in which they are likely to find themselves, thus reducing the negativity of the stressors, making the situation easier to cope with, avoiding extreme anxiety and avoiding a crisis.

Of the parents given prenatal information, only seven mothers and two fathers had toured the NNU prior to the baby's birth. The NNU tour has been shown in other studies to be an effective means of helping prepare parents. The additional information participating parents considered they benefited from during the tour included seeing the geography of the NNU, seeing a baby of a size and degree of sickness expected to be similar to their own, and meeting the staff. These are also some of the factors that have been identified, from previous studies, as potential negative stressors for parents. Therefore the tour of NNU could also be considered as a primary crisis prevention/anticipatory planning strategy.

No statistically significant difference in state anxiety levels was determined between those parents given prenatal information and/or a tour of NNU or not. However, the parents given this type of preparation reported that they felt more prepared for their postnatal experiences. NNU staff also reported that they felt parents who toured the NNU benefited from the information it provided once the baby was admitted, in relation to being more familiar with the NNU and able to concentrate on their baby. Therefore it is concluded that prenatal information about NNU care and/or a tour of the NNU, may be an effective primary crisis prevention/anticipatory planning strategy. It is of note that mothers given prenatal information and/or a tour of NNU had a significantly higher mean state anxiety score than mothers who had previous

experience of NNU ($p = <0.05$). Therefore this finding warrants further exploration in a future study.

Because childbearing is generally uncomplicated, most parents considered that their own childbearing would be uncomplicated and that their baby would not require NNU care. Therefore there was no reason for them to receive information about NNU care and for some, if any information was given to them, the parents felt that they had ignored it as irrelevant. Other parents felt that they might have worried more or been more frightened had they been given information, although there was no evidence in the data to suggest that parents who had experienced prenatal information did feel more worried or fearful.

There are doubts about the reliability of the STAI data, but the findings from the quantitative analysis suggest that parents might benefit from receiving prenatal information, therefore further research is required. To evaluate prenatal information as a primary crisis prevention/anticipatory planning strategy, a package of relevant basic prenatal information about NNU care could be developed and tested with a large sample of prospective parents. The content of the package should be of a general nature, but should include the main factors, identified from the literature, known to provoke negative stress and anxiety in parents. Consideration should be given to using media other than those currently used to convey the information. Collaboration with health education agencies may be beneficial in the development of the package, so that the content and the variety of media through which the information is communicated to parents appeal to them. Whatever media are used, it is suggested that written materials should be available for parents for future reference. While the relevance of the prenatal information may not become apparent for many parents, from them and those whose baby does require admission to NNU, the data generated may provide more insight into prenatal information as a primary crisis prevention/anticipatory planning strategy. Testing the effectiveness of the content, the media used to convey the information, and the most appropriate timing

for giving basic prenatal information to parents about NNU care could be included in the design of the study.

Implications for practice that arise from these findings are that any prenatal information should be documented in an identified area in the records and a system devised to inform NNU staff of this preparation when the baby is admitted to NNU.

Although previous research has used small samples, parents who toured NNU have acknowledged its benefits. Parents in the 'study' who had toured NNU, indicated they found it helpful and were less concerned about aspects of NNU than they felt they would have been. Therefore the tour could be considered as a primary crisis prevention/anticipatory planning strategy.

An implication for practice that arises from the findings is that the organisation, content and conduct of the tour require to be standardized. The suggestions of Griffin et al (1997) could be adopted. These are that

- parents with a fetus/pregnancy designated as high-risk should tour
- the tour should be offered at a mutually convenient time for parents and NNU staff, allowing sufficient time before during and after the tour to meet the parents' specific needs, and possibly offer a second tour
- the person accompanying the parents on the tour must be knowledgeable about the fetal/maternal diagnosis as well as the NNU and the care provided to babies
- the content should include the NNU environment, equipment, staff, usual practices, and the parental role in NNU, as well as the other factors known to be negatively stressful to parents
- written materials should be provided for parents.

In addition to the above, specific suggestions from the NNU staff in the 'study' were that

- there should be specific documentation of the NNU tour in an identified area in the records and in a NNU log

- a system be devised so that NNU staff are aware of this preparation when the baby is admitted to NNU.

18.1.1.3 Another type of preparation parents acknowledged was previous experience of NNU

Previous experience of NNU was acknowledged by 19 (30%) mothers and 7(28%) fathers. The experience of 10 of these mothers and four of these fathers was personal, with a previous baby in NNU. For the other parents, they had shared in the experience of other family members or friends.

Parents prepared in this way reported that they knew more about what to expect in the NNU, and felt more familiar with the equipment, staff and the routine, although they still had to adjust to the current baby and his condition. This was confirmed by NNU staff who were able to identify that parents with previous experience adapted more quickly to NNU than did parents with no previous experience, although the staff were not always aware of the parents' previous experience when the baby was first admitted.

While no statistically significant difference in state anxiety levels was determined between those parents who had previous experience of NNU and those who had not, the parents with previous experience reported that they felt their anxiety was less than it would have been without the previous experience. As indicated above, mothers with previous experience had a significantly lower mean state anxiety score than women with prenatal information ($p = <0.05$). The benefits parents identified suggested that previous experience was the 'ironic ideal' preparation. Therefore it is concluded that previous experience of NNU care could be an effective primary crisis prevention/anticipatory planning strategy

The implications for practice from these findings are that previous experience of NNU is documented in an identified area of the records, a system is devised so that NNU staff are aware of this experience when the baby is admitted to NNU, and also

that NNU staff help parents to appreciate the benefits of their previous experience in relation to the coping skills they developed. These coping skills can then be remobilized to help parents cope with the repeat experience, i.e. use their anxiety constructively.

While not specific to this section, it was identified in the discussion of findings that midwives could also acknowledge and help parents to appreciate the benefits of their previous experience during any other pregnancies so that their anxiety can be used constructively.

18.1.2 What level of anxiety do parents experience in the first days after their baby's admission to the NNU?

The majority of parents, 28 (44%) mothers and 12 (50%) fathers, experienced moderate levels of anxiety at some point during the first five days after admission of the baby to NNU, although there were no significant differences in the proportions of prepared and unprepared mothers and fathers in the low, moderate and severe level of anxiety.

Analysis of the qualitative data indicated that some parents viewed the admission of their baby to the NNU as a positive experience about which they were happy. However this contrasted with the anxiety felt by most parents. None of the parents viewed the admission as a crisis.

There was some incongruity noted between the quantitative measures and the qualitative perceptions of parents' anxiety from parents, NNU staff and the 'researcher'. This could suggest some doubt about the reliability of the data.

In the 'study', the parents completed the STAI within five days of the admission of their baby, measuring their usual level of anxiety and the anxiety they felt at the time

of completion of the inventory. Few parents had any difficulty completing the inventory. However, in the informal conversations and the interviews, parents reflected on their feelings during the period from the admission until the time of the conversation/interview. Therefore parents may have had difficulty verbally discriminating between the level of anxiety they felt when the baby was admitted and the level of anxiety they felt at the time of the conversation or interview. The level of anxiety during the conversation/interview was expected to match the state anxiety inventory score. Parental difficulty in discriminating between the levels of anxiety was not detected during the conversations or interview, although it is appreciated that the 'researcher' may have influenced the data generation.

The STAI has been used extensively with many different populations, including parents whose babies were admitted to NNU. It was considered the most appropriate tool for use in the 'study'. However part way through data generation in the 'study', the trait anxiety inventory's reliability was questioned by Hundley et al (1998) when used pre and postnatally, throwing doubt on the validity and reliability of the complete tool. These researchers suggested that further research should be undertaken to establish the reliability of the STAI with parents whose baby has been admitted to NNU. Because of the doubts raised about the STAI from the 'study' data analysis, the 'researcher' concurs with the recommendations of Hundley et al (1998) in relation to further study of the STAI.

Because data generation in the 'study' had already started, the STAI continued to be used and conclusions were tentatively made from the findings. Using the definitions selected for use (see Glossary), it is concluded that when measuring anxiety using the STAI, the majority of parents, 34 (53%) mothers and 15 (65%) fathers, were no more anxious than usual after their baby's admission to NNU, although most parents verbally expressed that they felt more anxious. Of the parents whose anxiety varied from usual, some mothers were more anxious than usual and others were less anxious, while all the remaining fathers were more anxious than usual. The more anxious a prepared mother usually was, the higher her anxiety was likely to be when

her baby was admitted to NNU ($p = <0.05$). There were no such significant relationships for unprepared mothers, prepared or unprepared fathers. Prepared fathers were the most anxious group and unprepared fathers were least anxious group.

The research design did not allow for determination of the specific cause of the variations in state anxiety, although chi-square testing suggested that any differences in the proportions of parents with low, moderate or severe state anxiety were likely to be independent of the parents' preparedness. However because of the relatively small samples, particularly of fathers, further research is required into gender differences, levels of state and trait anxiety, and preparedness. Further research is required to explore the effect of their anxiety levels and coping strategies on the relationship between fathers and mothers.

The incongruity between qualitative and quantitative measures of anxiety could also reflect the ability of parents to mask their true feelings, or their attempts to use coping strategies.

NNU staff do not usually formally measure parental anxiety or determine parents' coping strategies, but rely on the parents' description of their feelings and the individual staff member's assessment of the parents' verbal and non-verbal behaviour. Until a reliable measure of anxiety, easily administered in the clinical areas, is developed, it is important for NNU staff to be proficient in assessing parents' anxiety qualitatively. NNU staff also need to be aware of the coping strategies parents may use and how these can be demonstrated. The majority of NNU staff had undergone neonatal education programmes, where these basic skills would be expected to be developed. However, the content of these programmes varies and there was no measurement of the skills of NNU staff in parental anxiety and coping strategy assessment during the 'study'.

A limited recommendation is that neonatal education programmes include the theoretical basis on qualitative assessment of parental anxiety and use of coping strategies, including how to ask parents about their feelings, how anxiety can be demonstrated through verbal and non-verbal behaviours, and the coping strategies parents can use. A further limited recommendation is that there are opportunities to practice these skills under supervision and that they continue to be assessed as part of ongoing clinical performance appraisal.

18.1.3 What needs do parents perceive they have in the first days after their baby's admission to the NNU?

Parents wanted/needed to be in the situation in which they had expected to be during their pregnancy, i.e. after the birth of a healthy baby at term, they would have their baby with them after the birth and be caring for him. Even the parents who had expected to give birth to a preterm or to a sick baby hoped that their situation would revert to being uncomplicated.

When their situation was not as they had expected or hoped, parents were usually disappointed, but their needs were clear. They wanted to be with their baby, particularly to hold their baby, and also to help undertake their baby's care. There were delays for some parents in the contact with their baby in the labour ward or in the initial visits to NNU. These delays were perceived by parents to often be due to an oversight on the part of the staff caring for the baby in the labour ward. Alternatively they were due to the mother's poor obstetric/medical condition, or to the baby's poor condition requiring constant attention of medical and NNU staff, or to organizational difficulties in the postnatal ward. Parents indicated that these delays caused them particular frustration and additional anxiety. Delays in holding and participating in their baby's care were frustrating and caused further disappointment for parents, especially when they could see no reason for the delays.

There were differences in relation to holding, prenatal information and/or previous experience and state anxiety for mothers and fathers. The confirmation of findings from other studies that holding their baby is very important for mothers, possibly modifying state anxiety in mothers given prenatal information and/or with previous experience, justifies making a limited recommendation that mothers are enabled to hold their baby as soon as the baby's condition will allow after birth. Further research is required to explore the relationship between holding, preparation and state anxiety for fathers.

Some parents felt having their baby cared for in the NNU by NNU staff alienated them from their baby, adding to their feelings of disappointment that their expectations had not been met.

There are implications for practice from these conclusions. The first is that systems be established so parents can have contact with their baby as soon as, and as often as, they choose after the birth. If there is a delay in this contact, it should be reduced to a minimum and a full explanation should be given to the parents before or at the time of the delay.

It is also important that parents be enabled to have the types of interaction they choose with their baby and participate in their baby's care to whatever extent they choose from admission, taking into account the baby's condition and needs. The trend to develop a partnership between parents and NNU staff, will assist in the implementation of these practices. However, to make appropriate decisions in relation to these implications for practice, the parents require full information about the choices available to them in relation to their baby. Some of this information could be conveyed during prenatal information-giving about NNU and NNU staff can supplement this once the baby is in NNU.

18.1.4 To what extent has any prenatal preparation parents have experienced met these initial perceived needs?

The majority of parents felt there was little that could prepare them for NNU care. Parents were grateful for the prenatal information they were given and felt it did help prepare them for what they experienced after the birth. Previous experience of the NNU appeared to be the best preparation for parents. It allowed parents to know what to expect in relation to the environment, the equipment, and how their contact with their baby would be different. However, like the unprepared parents or those with prenatal information, these parents were usually unprepared for the size of baby. The babies were usually smaller than parents expected. This topic was seldom acknowledged as one that had been included in any prenatal information, although most parents who had a tour of NNU had been shown a baby of similar size to the baby to whom they expected to give birth. Most parents were also unprepared for their baby's condition, despite some having had information about it.

In relation to their postnatal needs, many parents felt unprepared for and unsure of their role in the NNU, although parents with previous experience adapted to this unexpected role more quickly than did unprepared parents. Parents gradually learned how their role differed from their expected role once the baby was in NNU, and adapted to it, although this could take many days. The difference in parental role was included in some prenatal information and in the tour of NNU, but not consistently or in sufficient detail for parents to always know what they could expect.

An implication for practice from these findings is that when prenatal information or a tour of NNU is given, aspects of NNU care that have been shown to be negative stressors to parents be discussed, including the possible size of the baby and specific details of how the parental role differs.

18.1.5 What perceptions do NNU staff have of the support parents require in the first days after the baby's admission?

Staff agreed that the main element of support they perceived parents required in the first days after admission was information. The information they thought parents needed was in relation to the baby's characteristics such as weight and length, his condition, his treatment, his outcome, their parenting role with their baby, and the equipment being used with his care. Information about the NNU and the routine was also thought by staff to be helpful to parents.

Unexpectedly, parents did not identify information as one of their needs in the postnatal period, as parents in previous studies had done. This may have been due to the excellence of the information given to them by the NNU staff and if so, this level of information-giving should be maintained. However it may have been that parents were unwilling to give negative feedback about NNU staff while the baby was still being cared for in NNU. Therefore an implication for practice is that NNU staff appraise the content of the information they offer parents and provide written materials to complement it.

The staff also felt that parents required varying levels of encouragement to interact with their baby, particularly in the immediate post-admission period. Therefore NNU staff perceived their role included facilitation of parents being with their baby and interacting with their baby as soon as possible after admission, allowing for the baby's condition. Staff felt that as soon as holding the baby was possible, this was facilitated. They also felt they encouraged parents to participate in their baby's care as soon as possible, within the limits of the parents' wishes and the baby's condition. NNU staff appeared to be aware of the disappointments parents had acknowledged in relation to the delays in adopting the parental role they had expected, and they tried to explain the reasons to parents. There was some evidence that parents did not always understand or were placated by the explanations. Therefore the clinical implications suggested in section 18.1.3 also apply to this conclusion.

Staff were usually unaware of the preparedness of parents until after the first few days when parents' easier adaptation became more clear. They perceived that parents with previous experience adapted more quickly to the NNU and their different parenting role than did other parents. They also perceived that parents who had received prenatal information and/or a tour of NNU, adjusted to the NNU environment more quickly than unprepared parents.

Because differences between parents were unclear in the initial days of the baby's admission, staff gave similar types of information, encouragement and facilitation to all parents. All parents reported that the support given by NNU staff had been helpful to them and no parent commented on the repetition of information. Parents' reluctance to give negative feedback about NNU may have influenced this finding, therefore, as in sections 18.1.1.2 and 18.1.1.3, it is suggested that a method of informing NNU staff of parents' preparedness be devised. This could help staff in their initial interactions with parents. If the implications for clinical practice suggested in section 18.1.3 are implemented, parents should receive the information they require.

18.2 Meeting objectives

Introduction

In this section, the three research objectives (see section 1.5.3) will be met in the form of conclusions based on the findings presented in chapters 12 to 16. There are three sub-sections headed by a research objective. Within each sub-section, the main conclusions are highlighted.

18.2.1 To determine the extent to which current prenatal preparation of parents for NNU care meets the perceived needs of parents whose baby requires intensive or special care in a NNU.

18.2.1.1 Prenatal information about NNU care and/or a tour of the NNU

The majority of parents considered prenatal information about NNU irrelevant unless and until a high-risk designation was made. The minority of parents who received prenatal information on NNU care and/or a tour of NNU were appreciative of these opportunities and felt their needs were partially met. They felt they knew about the environment of the NNU, equipment, and aspects of their baby's condition and care. However, many did not realise how small their baby would be nor how their parenting role would differ.

18.2.1.2 Previous experience

A minority of parents had previous experience of NNU, either with their own baby or a baby of a member of their family or a friend's baby, and felt that many of their needs were met. These parents knew most about the environment of the NNU, equipment, staff, routines and the altered parenting role, although they also did not often realise what their baby would look like or what his condition might be. They appeared able to adjust to having their baby in the NNU more quickly than the other groups of parents, specifically in relation to participating in the baby's care.

18.2.2 To determine if there is any difference between parents 'prepared' in different ways and between 'prepared' and 'unprepared' parents in their anxiety, their initial contact with their baby in NNU and the level of support offered by NNU staff.

Statistically significant differences, i.e. p values of 0.05 or less, between prepared and unprepared parents or between parents prepared in different ways were determined for very few variables. These were that prepared fathers had a lower mean trait anxiety score than unprepared fathers, and the norm. Prepared mothers had a higher mean trait anxiety score than prepared fathers, and unprepared mothers had a lower mean trait anxiety score than unprepared fathers. The more anxious prepared mothers usually were, the more anxious they were likely to be when the baby was admitted to NNU.

While mothers given prenatal information had a significantly higher mean state anxiety score than mothers with previous experience, there were no other statistically significant differences in mean state anxiety scores between parents prepared in different ways. However, parents given prenatal information felt that they were not as anxious as they would have been had they not had this type of preparation. Parents with previous experience felt their anxiety was moderated because of it. They felt they were not as anxious with the current admission as they had been during the first experience.

All parents wanted to be with their baby, hold him and participate in his care as they had expected to do, as soon as possible after the birth. Any delays in achieving initial contact with their baby appeared unrelated to preparedness. The delays were perceived by the parents to be due either to an oversight on the part of the staff caring for the baby in the labour ward, or to the mother's poor obstetric/medical condition, or the baby's poor condition requiring constant attention of medical and

midwifery/nursing staff, or to organizational difficulties in the postnatal ward. The latter was most frustrating for both prepared and unprepared parents.

Qualitative data suggested that holding their baby appeared to be a very important aspect for mothers. While there are doubts about the reliability of the STAI, the STAI data appeared to support the qualitative data. Prepared and unprepared mothers, and those prepared in different ways, who had held their baby prior to participation had significantly lower mean state anxiety scores than prepared and unprepared mothers, and those prepared in different ways who had not held their baby prior to participation.

The qualitative data were not as clear about the importance of holding to fathers and the quantitative data revealed different findings to the mothers' findings. Prepared mothers who had held their baby had a very significantly lower mean trait anxiety score than prepared mothers who had not held, whereas there was no significant difference for fathers. Prepared mothers who had held had a significantly lower mean state anxiety score than unprepared mothers who had held, whereas prepared fathers who had held had a significantly higher mean state anxiety score than unprepared fathers who had held.

Mothers with previous experience who had held had a significantly lower mean state anxiety score than mothers with experience who had not held, whereas there was no significant difference for fathers. Fathers with previous experience who had held had a significantly higher mean state anxiety score than fathers with no experience who had held, whereas there was no significant difference for mothers.

Mothers given prenatal information who had held had a significantly lower mean state anxiety score than mothers given prenatal information who had not held, whereas there was no significant difference for fathers. Fathers given prenatal information who had held had a significantly higher mean state anxiety score than

fathers given no information who had held, whereas there was no significant difference for mothers.

There were no significant differences between the mean state anxiety scores of mothers and fathers who had held their baby prior to participation or between the mean state anxiety scores of mothers and fathers who had no held their baby prior to participation.

The majority of parents perceived the level of support from NNU staff as being appropriate for their needs, whether or not they were prepared and whether they were prepared in different ways. There were a minority of prepared and unprepared parents who felt alienated from their baby despite the efforts of the NNU staff to have them visit the NNU and have contact with their baby.

18.2.3 To determine how NNU staff perceive the level of support required and given to parents 'prepared' in different ways about NNU care and to 'prepared' and 'unprepared' parents.

The data generation methods used with NNU staff have no established reliability, therefore the findings are interpreted cautiously. NNU staff are usually unaware of the preparedness of parents, therefore they reported that similar levels and types of support are offered to all parents. Usually after one or two days, NNU staff perceive a difference between parents with previous experience in NNU, as they appear to adapt to their different parenting role in the NNU more quickly. Prepared parents also appear to NNU staff to adjust to the NNU environment more quickly than unprepared parents. NNU staff reported that once differences are identified, the level of support from staff varies according to their changing needs.

18.3 Limitations and measures to overcome them

Introduction

Several limitations became apparent during the planning phase and the execution of the 'study'. In this section, there are two sub-headings, theoretical and practical, within which each limitation is highlighted by a bullet point and explained. If feasible, measures to reduce the effects of the limitations were included in the design of the 'study', and these are explained. Other limitations were not amenable to change in the 'study', however suggestions for avoiding such limitations in future research are included.

18.3.1 Theoretical limitations

- The design of choice to determine if prenatal information and/or previous experience causes differences in parents in relation to the variables of interest in the 'study', is the experimental design. However, this choice was not possible. Manipulation prenatal information would have been unethical as this is already available throughout Scotland, therefore one group of parents could not be denied the opportunity receive such information for the purposes of research. Previous experience is not amenable to manipulation.

The descriptive comparative design chosen for the 'study' was the alternative that allowed the research objectives to be met and the research questions to be answered, although cause and effect relationships could not be determined. While the statistical significant findings suggest that similar findings could be predicted for similar samples, cause and effect relationships were discounted throughout.

- Random sampling is a robust sampling technique. However, a random sample of parents was not possible because admission to NNU is an unexpected situation for the majority of parents. Therefore defining the population from which a

random sample could be recruited is not feasible. Randomization is a measure used to strengthen non-random, less robust sampling techniques. However, this was not feasible for use with the parents because the 'researcher' was unable to manipulate preparation, or the types of preparation.

If a specifically designed package of relevant basic prenatal information about NNU care was developed (see section 18.4.3), future research could use an experimental design to test this package against the prenatal information that is currently available, in relation to the variables of interest in the 'study'. There were several confounding variables discussed in section 7.2. These would require to be taken into account in the design of a future study, and would include how the package would be delivered or by whom, that random sampling would not be possible, how any random allocation could be blind, whether primigravid and multigravid women would be given the information, and how fathers would be given the information.

However, the descriptive, comparative design of the 'study' could also be replicated, involving more NNUs. If a power analysis was calculated for a two-tailed hypothesis, much larger samples would be required. Assuming these adjustments were made, the findings could be confidently generalized to the population.

- Non-probability convenience sampling of the parents for the first stage of data generation resulted in convenience sampling of NNU staff and babies. The potential for bias in the samples was therefore increased. However, the parents, NNU staff and babies recruited were similar in characteristics to those in their populations, thus reducing the effect of the limitation. The effect was reduced further because the parents and NNU staff gave a variety of perspectives on the topics of interest in the 'study'.

By process of elimination, convenience sampling was the best option in the 'study' despite the limitations. Heterogeneous samples were recruited, and triangulation of data generation methods reduced the potential for bias with a convenience sample.

However, despite their similarities, the samples were not representative, therefore the ability to confidently generalize from the samples to the population was not possible. Larger samples may have reduced this limitation, but were impractical in the 'study'.

- Based on the findings of previous studies, the power analysis was calculated on the assumption that parents would be more anxious than usual when their baby was admitted to the NNU, i.e. one-tailed testing. While some parents were more anxious than usual, many were no more anxious than usual and some mothers were less anxious than usual. The samples of mothers and fathers were therefore too small to allow generalization of findings to the population and recruiting larger samples based on a revised power analysis was impossible.

In a replication of the 'study' or in future studies with other designs, power analysis should be calculated using two-tailed testing as a guide. Larger samples would be required, but statistical findings could be more confidently generalized to the population.

- The design of the 'study' allowed the 'researcher' one contact with parents and NNU staff in the first stage and one contact in the second stage of data generation. The design did not permit the opportunity for the 'researcher' to fully validate the interpretations of the qualitative data with the participants. However, the 'researcher' did check the interim understanding of perspectives during conversations, interviews and the focus groups, by presenting mini-summaries as questions to the participants, adjusting the interpretation if required, thus reducing the effect of this limitation. Had there been no other method of validating the data, the 'researcher' may have presented a biased interpretation of the data, a serious limitation. However, the potential effect of this limitation was reduced, as triangulation of the data generation methods had been included in the design. Data from quantitative generation methods generally supported the interpretation of the qualitative data, indicating that the triangulation of data

generation methods was partially successful. However, the incongruities that were identified may suggest that more thorough validation of the interpretation of data was required.

In any future study, a method of validating the researcher's interpretation of the qualitative data should be included into the research design. Specifically recruiting a proportion of the participating parents to participate in such a validation process would be one appropriate method.

- The STAI was chosen as the most appropriate tool for use in the 'study', particularly because it had been used in previous studies of parent with babies in NNU. However, during the 'study', Hundley et al (1998) questioned the reliability of the STAI used with women in the pre and postnatal periods. The incongruity of some of the quantitative and qualitative data in the 'study' stimulated further doubt. Such doubt reduces the validity of the findings in relation to the STAI, resulting in only limited recommendations and implications for clinical practice being made.

Further study of the reliability and validity of the STAI with populations of parents whose baby is in NNU is required. Alternatively another tool to measure anxiety in such a population could be developed and further study could establish its reliability and validity.

- There were inconsistencies in the parental data concerning expectation and warning of admission, and prenatal information and source/s that reduced the reliability of the data. The analysis of the qualitative data on expectation confirmed the quantitative findings, but there was no validation of the other variables. Clearer, more simple closed and follow-up questions and method/s of data validation may have reduced the inconsistencies.

Unambiguous wording of questions is vital to generate reliable data. If feasible, pre-testing of the questions and/or a pilot study is suggested.

- Some NNU staff reported that they could not clearly remember the parents. Incongruity between the data from parents and from NNU staff was also identified. Previous research had shown that midwives did not always do what they said they did in practice. While this study was not of NNU staff, the incongruities raised doubts about the reliability of the quantitative data from NNU staff about parental contact with the baby and parental support by NNU staff. With reference to the literature, the questionnaire was designed by the 'researcher', however its reliability and validity were not established. While consisting of only some of the staff who completed the questionnaire, the focus group discussions did not allow for confirmation of specific data from the questionnaire. There was therefore no validation of the quantitative data from NNU staff and this presented another limitation.

If a similar study was to be conducted, a method of validating the NNU staff data should be included. Being able to directly observe NNU staff caring for the babies of participating parents is a possible strategy. While time-consuming and researcher-intensive, reliable data are more likely to be generated. If this strategy was not feasible, NNU staff and parents could be asked to record specific aspects of parental contact and parental support from/by NNU staff. These records could then be compared and validated data generated.

18.3.2 Practical limitations

- The 'study' was conducted on a part-time, partially self-funded basis while in full-time employment. These factors severely restricted the choices available to the 'researcher' in terms of design. However, the main limitation was the lack of time available to devote to all aspects of the 'study'. While a timetable for the 'study' was made, it was revised many times due to the inordinate pressures

from the employer of the 'researcher'. Applications for research funding were unsuccessful.

If the 'researcher' undertakes further research while in full-time employment, full funding and contracted hours in which to conduct the research will be negotiated and confirmed in writing.

- During the 'study', the lack of recruitment of fathers was of concern, as it would reduce the power of statistical testing and therefore of generalization of the findings. Two alternatives were considered during the conduct of the 'study', but neither was feasible. This limitation became more serious when the initial quantitative data analysis revealed that the basic assumption on which the power analysis had been calculated was incorrect (see below).

The lack of research evidence about the experience of fathers in NNU could be partly overcome if, in a future study, only fathers were recruited. If a future study's design also included mothers, provision for recruitment to continue until the required number of fathers and mothers was achieved would need to be made.

- The main deviation from the plan for the 'study' was that only five mothers consented to participate in the second stage of data generation. However, purposive sampling enabled the recruitment of prepared and unprepared mothers, and those prepared in different ways, and resulted in a small sub-sample with varied demographic characteristics not dissimilar to the main sample. The data generated from these mothers was detailed and of great value in being able to answer the research questions and meet the research objectives. However the opportunity to generate data from other mothers and fathers by interview would have been welcomed.

  During their participation in the first stage of data generation, the majority of parents had spontaneous conversations with the 'researcher' and field notes were

recorded. These data provided a rich source of qualitative data that were very helpful to understanding the phenomena of interest in the 'study'.

Had the 'researcher' been more available to parents, more alternatives for appointments with parents might have been possible. However, it was noted the schedules of postnatal parents whose baby is in NNU are exceptionally full, with little time for extra activities.

In any future study, alternative means of recruiting parents to interview need to be considered, especially in relation to fathers' participation.

- The initial quantitative data analysis revealed that the assumption that parents would be more anxious than usual when their baby was admitted to NNU to be false, negating the power analysis calculation of sample sizes (see sections 13.1.3.2 and 13.2.3.2). It was impractical to recalculate the power analysis and recruit more parents due to the increased financial and time costs that would have been prohibitive.

As indicated in section 18.3.2, in any replication of the 'study' or future studies with other designs, power analysis should be calculated using two-tailed testing as a guide. Larger samples would be required, but statistical findings could be more confidently generalized to the population. Account of the increased costs would have to be taken.

- The analysis of qualitative data was originally planned using the Ethnograph™ software package. Technical difficulties made this impossible. Manual management of data was excellent experience for the 'researcher' and the analysis was thorough, but possibly more time-consuming.

In any future study, technical competence of hardware and software should be guaranteed for the whole study timetable.

18.4 Limited recommendations, implications for practice, and suggestions for further research

Introduction

The limitations of the 'study' reduce the generalisability of the findings, and throughout the thesis and particularly in section 18.1, implications for practice and only limited recommendations have been made. To conclude the thesis, in this section the limited recommendations and implications for practice are listed. They are not listed in any order of priority, although the implications for practice are divided into pre and postnatal sub-sections. They are followed by suggestions for further research.

18.4.1 Limited recommendations

Recommendations can justifiably be made if the findings in the 'study' support those from previous studies. However, the theoretical and practical limitations in the 'study' result in only limited recommendations being made. Therefore it is recommended that

1. neonatal and midwifery education programmes include the theoretical basis on qualitative assessment of parental anxiety and use of coping strategies, including how to ask parents about their feelings, how anxiety can be demonstrated through verbal and non-verbal behaviours, and the coping strategies parents can use.
2. neonatal and midwifery education programmes include the theoretical basis on mechanisms of support for parents whose baby may be or is admitted to NNU.
3. NNU staff continue to enable parents to hold their baby as soon after birth as is possible.

18.4.2 Implications for practice

18.4.2.1 Prenatally

It is suggested that

1. if prenatal information and/or a tour of NNU is given, the main factors, identified from the literature and known to provoke negative stress and anxiety in parents, are included.

2. when there is an expectation that the baby will require NNU care, and certainly when a high-risk status is conferred, any prenatal information already given could be supplemented by more specific information related to the individual baby, and that a prenatal tour of NNU could be offered. The possible size of the baby and specific details of how the parental role differs in NNU could be included. The extent and nature of this additional preparation will depend on the time available after the expectation is established and/or the high-risk status is conferred, and the baby is born. NNU staff could consider becoming more involved in the delivery of prenatal information to parents about NNU care.

3. any verbal information is also supplied to parents in a written format

4. the organisation, content and conduct of the NNU tour are standardized using the recommendations of Griffin et al (1997). These specifically are that

- parents with a fetus/pregnancy designated as high-risk should tour
- the tour is offered at a mutually convenient time for parents and NNU staff, allowing sufficient time before during and after the tour to meet the parents' specific needs, and possibly offer a second tour
- the person accompanying the parents on the tour must be knowledgeable about the fetal/maternal diagnosis as well as the NNU and the care provided

- the content includes the NNU environment, equipment, staff, usual practices, and the parental role in NNU, as well as the other factors known to be negatively stressful to parents
- written materials are provided for parents.

and additionally from this 'study' that

- there is specific documentation of the NNU tour in an identified area in the records and in a NNU log.
- NNU staff appraise the content of the information they offer parents postnatally in NNU and provide written materials to complement it.

5. any prenatal information given to parents, with or without a tour of NNU, is documented in an identified area in the records in order that NNU staff are aware of it when the baby is admitted to NNU

6. any previous experience of NNU is documented in an identified area of the records in order that NNU staff are aware of it when the baby is admitted to NNU

7. midwives and NNU staff help parents to acknowledge and appreciate the benefits of their previous experience in relation to the coping skills they developed, the use of which may help them cope with the repeat experience, i.e. use their anxiety constructively.

18.4.2.2 Postnatally

It is suggested that

1. NNU staff continue to offer information and support to parents according to their needs, when the baby is being cared for in the NNU

2. midwives and NNU staff establish systems so parents can have contact with their baby as soon as, and as often as they choose after the birth. If there is a delay in this contact, it is reduced to a minimum and a full explanation is given to the parents before or at the time of the delay.

3. midwives and NNU staff enable parents to have the types of interaction they choose with their baby and participate in their baby's care to whatever extent they choose from admission, taking into account the baby's condition and needs. This requires that parents receive full information about the choices available to them in relation to their baby and that midwives and NNU staff facilitate the choices.

4. that there are opportunities to practice parental assessment and support skills under supervision and that they continue to be assessed as part of ongoing clinical performance appraisal

18.4.3 Suggestions for further research

The 'study' could be replicated with adjustments made to reduce the limitations. In preparation for an alternative study of prenatal information for parents, some preliminary development would be required. This would include

- development of a package of relevant basic prenatal information about NNU care suitable for use with all prospective parents. The content of the information could be of a general nature, but include the main factors, identified from the literature and known to provoke negative stress and anxiety in parents. In particular, the varying sizes of babies and the alteration in parental role could be included.
- consideration of media other than those currently used to convey the information
- collaboration with health education agencies in the development of the package, so that the content and the variety of media through which the information is communicated to parents appeal to them.

- the availability of written materials to complement information given through other media for parents for future reference.

It is suggested that further research is undertaken

1. to test the effectiveness of the content of the basic package of information about NNU care for all parents and the media through which this information is conveyed.

2. to determine the most appropriate timing for giving basic prenatal information to all parents about NNU care.

3. to further explore gender differences, levels of state and trait anxiety, the influence if any of holding, and preparedness of parents.

4. to explore the effect of their anxiety levels and coping strategies on the relationship between fathers and mothers.

5. to establish the reliability of the STAI with parents whose baby is admitted to NNU.

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Appendix 1

Definitions and clinical categories of babies requiring neonatal care

The information in this appendix is taken directly from the "Report of working group of the British Association of Perinatal Medicine and Neonatal Nurses Association on categories of babies requiring neonatal care" (BAPM and NNA 1992 pp 868-869). In general the exact words in the report are quoted, but minor changes were made to correct the original publication's spelling and grammatical errors but these do not alter the meaning of the definitions in any way.

Definitions of neonatal care

LEVEL 1 INTENSIVE CARE (MAXIMAL INTENSIVE CARE)

Care given in an intensive care nursery which provides continuous skilled supervision by qualified and specially trained nursing and medical staff. Such care includes support of the infant's parents.

LEVEL 2 INTENSIVE CARE (HIGH DEPENDENCY INTENSIVE CARE)

Care given in an intensive or special care nursery which provides continuous skilled supervision by qualified and specially trained nursing staff who may care for more babies than in level 1 intensive care. Medical supervision is not so immediate as in level 1 intensive care. Care includes support of the infant's parents.

SPECIAL CARE

Care given in a special care nursery, transitional care ward, or postnatal ward which provides care and treatment exceeding normal routine care. Some aspects of special care can be undertaken by a mother supervised by qualified nursing staff. Special nursing care includes support and education of the infant's parents.

NORMAL CARE

Care given by the mother or mother substitute with medical or neonatal nursing advice if needed.

Clinical categories of neonatal care

LEVEL 1 INTENSIVE CARE (MAXIMAL INTENSIVE CARE)

Level 1 intensive care should be provided for these babies:

1) Receiving assisted ventilation (including intermittent positive airway pressure, intermittent mandatory ventilation, and constant positive airway pressure) and in the first 24 hours after its withdrawal.
2) Of less than 27 weeks' gestation for the first 48 hours after birth.
3) With birth weight of less than 1000 g for the first 48 hours after birth.
4) Who require major emergency surgery for the preoperative period and post operatively for 48 hours.
5) On the day of death.
6) Being transported by a team including medical and nursing staff.
7) Who are receiving peritoneal dialysis.
8) Who require exchange transfusion complicated by other disease processed.
9) With severe respiratory disease in the firs 48 hours of life requiring a fractional inspiratory oxygen (FiO_2) of >0.6.
10) With recurrent apnoea needing frequent intervention, for example over five stimulations in eight hours or resuscitation with intermittent positive pressure ventilation (IPPV) two or more times in 24 hours.
11) With significant requirements for circulatory support, for example inotropes, three or more infusions of colloid in 24 hours, or infusions of prostaglandins.

LEVEL 2 INTENSIVE CARE (HIGH DEPENDENCY INTENSIVE CARE)

Level 2 intensive care should be provided for these babies:

1) Requiring total parenteral nutrition.
2) Who are having convulsions.
3) Being transported by a trained skilled neonatal nurse alone.
4) With arterial line or chest drain.
5) With respiratory disease in first 48 hours of life requiring an FiO_2 of 0.4 - 0.6.
6) With recurrent apnoea requiring stimulation up to five times in an eight hour period or any resuscitation with IPPV.
7) Who require an exchange transfusion alone.
8) Who are more than 48 hours' postoperatively and require complex nursing procedures.
9) With tracheostomy for the first two weeks.

SPECIAL CARE

Special care should be provided for these babies:

1) Requiring continuous monitoring of respiration or heart rate or by transcutaneous transducers.
2) Receiving additional oxygen.
3) With tracheostomy after the first two weeks.
4) Being given intravenous glucose and electrolyte solutions.
5) Who are being tube fed.
6) Who have had minor surgery in the previous 24 hours.
7) Who require terminal care but not on the day of death.
8) Being barrier nursed.
9) Undergoing phototherapy.
10) Receiving special monitoring (for example frequent glucose or bilirubin estimations).
11) Needing constant supervision (for example babies whose mothers are drug abusers).
12) Being treated with antibiotics.

Appendix 2

A survey of information given during pregnancy by midwives to parents about neonatal unit care, whether or not the baby was likely to require such care

Claire Greig

Objective: **to determine what information is given by midwives to parents in Scotland about care in a neonatal unit (a designated nursery offering special and/or intensive care to preterm and sick/vulnerable newborn babies), whether or not the baby is expected to require such care.**

Design: **a survey using self-completion questionnaires.**

Setting: **the questionnaires were sent to identified senior midwives in community and hospital settings in Scotland.**

Participants: **155 midwives, including 100 midwives involved in preparation for parenthood classes, 21 midwives responsible for hospital-based antenatal care, 17 midwives responsible for care in labour wards and 17 midwives responsible for care in neonatal units.**

Findings: **information about care in a neonatal unit was offered by all groups surveyed to all parents with whom the midwives were in contact. Eight rural community midwives did not routinely give information. Midwives involved in preparation for parenthood classes offered specific information at a median gestation of 28 weeks. The midwives addressed most suggested topics. The most commonly included topics were why babies require neonatal care and what problems they may have. The least commonly included topic was the long-term problems the baby may have. Several methods of teaching were used, especially discussion and question and answer, with a visit to the neonatal unit a common strategy. Few midwives shared information using audio-visual methods.**

Key conclusions: **the majority of midwives sampled offered information prenatally about neonatal unit care, with many tailoring this to the womanís needs.**

Implications for practice: **there should be consideration of the need to give information to all pregnant women and their partners, the most appropriate time for giving such information and the use of audio-visual teaching resources. The findings will inform further study of the extent to which such information meets the needs of parents.**

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INTRODUCTION

A neonatal unit (NNU) is a dedicated hospital setting in which care can be offered to preterm and sick/vulnerable newborn babies by specially trained midwifery, nursing and medical staff. In the UK some NNUs provide only special care, while others provide both special and intensive care (Cooke 1992). In the UK NNUs are usually located in Regional Referral or District General Hospitals.

The birth of a baby who requires admission to a NNU is acknowledged as being particularly stressful for parents (McHaffie 1987, Alfonso et al 1992), whether or not the baby was expected to require such care. This stress may interfere with the initial and subsequent interactions parents have with their baby and negatively influence their longer term relationship (Klaus & Kennell 1982, de Chateau 1987, Wyly 1995). NNU staff have developed strategies to help parents work through their feelings, to improve emotional well-being and to encourage interaction with their baby, thus influencing the development of a positive parent–baby relationship (Bradford & Singer 1991, Shellabarger & Thompson 1993). Meta analysis of studies undertaken to evaluate these strategies revealed that many were successful in the short term, although their long-term impact has not been sufficiently evaluated (Barrera & Rosenbaum 1992). However, preparation for stressful events has been shown to be effective in making the adjustment to that event, when it actually happens, more positive (Parkes 1975, Elbourne et al 1989, Oetker-Black 1993). If parents whose baby required care in a NNU felt equally well prepared, they may be able to adjust to their unexpected circumstances more positively, thus reducing the need for the postnatal strategies suggested above.

No research evidence could be located as to whether antenatal preparation of parents for neonatal care positively influences the reaction they experience if their baby is actually admitted to a NNU. Nor is it clear what, if any, information is included on the topic in normal prenatal preparation for parenthood classes run by midwives. Lay literature available to prospective parents tends not to refer to such a possibility, or does so in a positive manner.

It has been suggested that abnormal aspects of pregnancy, childbirth and parenthood are too distressing for parents to discuss, and that this would result in unnecessary stress during what should be a happy experience (Fleissig 1993). In a review of the literature on the effectiveness of antenatal education, Nolan (1994) concludes that women want honesty and realism from those teaching antenatal preparation classes/sessions and want an agenda that suits their needs. Therefore, if women want to learn about NNU care, it should be discussed openly and honestly with them.

Parents who are known to be going to have a baby who will require admission to NNU can be, and are, introduced during pregnancy to NNU staff and see where their baby will be cared for. This strategy is widely practised and recommended (Boxall & Whitby 1983). However, this is usually undertaken when the woman is admitted to hospital and/or is in labour, thus her receptivity to information could be questioned (Redshaw et al 1993). This gives more credence to the argument for any such information to be given during pregnancy.

As part of a large Department of Health survey of neonatal nursing, Redshaw et al (1993 p. 16) concluded that there should be 'more prenatal preparation regarding neonatal care', however, the content, presentation and timing of such preparation was not elaborated on. As the current provision of prenatal preparation of parents about neonatal care is not identifiable from the literature, it is difficult to make specific recommendations about how much would constitute 'more'.

Before any investigations of the effects of prenatal preparation about neonatal care could be undertaken, it was relevant to determine what information about NNU care is given by midwives to parents attending normal preparation for parenthood classes/sessions, and how and when this information is included; and to determine what information midwives give to parents about NNU care and how this contribution is made. Therefore, the following descriptive preliminary survey was undertaken.

METHODS

In order to generate mainly factual data from midwives on the nature of prenatal information given to parents about NNU care, a descriptive survey design was selected. Polit and Hungler (1989) suggest the survey as being the appropriate design for such a purpose. As it was planned to sample both senior midwives involved in preparation for parenthood classes and senior hospital-based midwives working in antenatal wards, labour wards and neonatal units throughout Scotland, a postal questionnaire for data collection was considered appropriate. This method enabled such a geographically-wide population to be reached in a relatively cheap manner (Burns & Grove 1993).

Postal questionnaires have the benefit of being self-administered, which gives the respondent more time to think about the answers and, thus, generate detailed data. The influence of the researcher on any answers is diminished. However, disadvantages of this type of questionnaire are that questions can be ignored, not be fully understood or be incorrectly answered, thus negatively affecting the quality of the data (Burns & Grove 1993). These disadvantages did not appear to affect this study to any significant degree.

As no suitable questionnaire was available, one was developed by the researcher. Because four groups of midwives were to be sampled, the wording of some questions was altered slightly to make them more relevant to each of the groups of midwives involved, therefore four different versions of the same basic questionnaire resulted. The questions had fixed-choice answers and/or space for open comments.

The first question asked whether the midwives or their staff gave information to parents about the possibility of a baby requiring admission to the neonatal unit. Because the information given might differ if the baby was unlikely to require admission or was

known to be at slight or high risk of admission to a NNU, the fixed choice answers were:

- not at all;
- with all parents;
- only if parents ask specifically ;
- for parents where there is a *slight risk* of their baby requiring care in a neonatal unit;
- for parents where there is a *high risk* of their baby requiring care in a neonatal unit.

The next question was only for midwives involved in preparation for parenthood classes. They were asked to identify when, during pregnancy, any such information was usually given.

If the possibility of neonatal unit admission was discussed with any parents, the next question asked about what information was given. The fixed choice answers were based on the findings of previous studies, which indicated what information parents would have liked (McHaffie 1987, Bass 1991, Niven et al 1993). It was expected that the quality and quantity of information would vary depending on the midwives' experience and understanding, therefore the fixed choice answers were deliberately broad in their scope:

- which babies require neonatal care;
- what a preterm baby looks like;
- what problems babies may have;
- what treatment is available for these babies;
- what long-term problems these babies may have;
- what the neonatal unit looks like;
- when parents are allowed to visit neonatal units;
- who else can visit the baby;
- what parents can do for the baby while in the neonatal unit.

There was opportunity given to indicate any 'other' information which was included.

The final question in this section referred to the ways in which such information was shared with the parents. The fixed choice answers were, 'video, discussion, question and answer, visit to neonatal unit, lecture and booklet', with 'another' option.

Additional questions pertained to midwives who gave no information about neonatal unit admission to any parents. There was opportunity for them to explain their rationale and indicate whether this aspect of care was likely to change and if so, in what ways.

To try to ensure reliability and validity, a pre-test of the questionnaires took place using midwives in Lothian not involved in the main study. Minor alterations to the wording of the introductory letter and to the instructions for completion of the questionnaire were suggested. The pre-test participants were asked specifically to comment on the fixed choice options. Of the answer options to the question related to methods used to give the information, the 'lecture' option was deleted from the questionnaire designed for midwives holding preparation for parenthood classes/sessions but was retained in the questionnaires for the hospital-based midwives. No additional options were suggested.

Ethical approval was sought and granted from all 14 Scottish Health Board Ethics Committees and the four relevant divisions of Greater Glasgow Health Board. The study was supported by the Milupa Bursary Fund of the Scottish Neonatal Nurses Group.

Although it would have been ideal to have sent questionnaires to each midwife in Scotland, financial, time and logistical reasons prevented this. As the majority of midwives work within a hierarchical structure, accessing senior midwives was considered an appropriate compromise. They would be aware of local and individual practices in relation to prenatal preparation about NNU care.

In order to maximise the response rate for postal questionnaires, part of the strategy suggested by Dillman (1983) was used. This involved identifying, by name, the population of midwives to whom questionnaires would be sent. To achieve this all Directors of Midwifery Services in Scotland, or their equivalents, were asked, in writing, for the names and addresses of senior midwives within their jurisdiction responsible for preparation for parenthood classes/sessions, and antenatal ward, labour ward and NNU care whom they would allow the researcher to contact.

When access to midwives was confirmed, personally-addressed introductory letters, instruction sheets and questionnaires were sent to 198 midwives. Midwives were requested to use an accompanying stamped, addressed envelope to return the questionnaire. If the questionnaire was not returned by the date specified, a reminder letter was sent. Seventy-one reminders were sent. Completion and return of the questionnaire were interpreted as tacit consent, therefore no consent form was required.

Quantitative data were extracted by the researcher from the questionnaires to a computer spreadsheet, allowing analysis using Microsoft Excel software. Accuracy in data input was checked by a colleague unconnected with the study, using a 10% random sample of the questionnaires. A level of 100% accuracy was determined. Qualitative data were transcribed using Microsoft Word software to facilitate collation.

Of the 155 sample questionnaires, the quantitative data from 153 were analysed using descriptive statistics. The remaining two questionnaires, from midwives involved in preparation for parenthood classes, were incorrectly completed, thus they were excluded from the quantitative analysis, although their additional comments were included. The data were similar for all groups of midwives, therefore the findings, where possible are reported collectively. By the end of the three-month data collection period, 155 questionnaires had been returned giving a 78% response rate.

The 43 midwives who did not respond were mainly from rural areas of practice and the reason for non-response was unclear. However, particularly

for rural midwives, the use of the phrase 'preparation for parenthood classes' may have been off-putting as these midwives generally do one-to-one teaching rather than offer classes. The possible misinterpretation of the word 'classes' had not been identified in the pre-test.

FINDINGS

Information about where the midwives worked is shown in Table 1. The majority of midwives sampled gave some information to all women/parents with whom they came in contact (Table 2). Only eight midwives involved in preparation for parenthood classes/sessions indicated that no preparation was given, and of these, five were from island communities and three were from mainland rural communities. However, from their comments, it was evident that five actually gave some preparation, or planned to introduce such preparation within the next year, especially if a woman asked, or when her pregnancy or birth became complicated.

Information was given by midwives involved in preparation for parenthood classes from 'booking' through to 36 weeks' gestation, with a median gestation of 28 weeks. Most midwives included most of the topics of information suggested in the questionnaire, with the most commonly included topics being the reasons why babies require neonatal care and what problems the babies might have. The least commonly included topic was the long-term problems babies may have (Fig. 1).

Midwives used a variety of methods to give information although audio-visual methods were seldom used as were lectures (Fig. 2).

Table 1 Questionnaires sent and returned

	Number sent	Number returned	Total % response
Preparation for parenthood	139	100	72
Prenatal	24	21	7
Labour	18	17	94
Neonatal unit	17	17	100
Totals	198	155	78

Table 2 Involvement in giving information or not

Alternative answers (more than one box could be ticked)	Number of midwives responding (%) $n=153$	
	n	%
Not at all	8	5
With all parents	104	68
Only if parents ask specifically	46	30
Parents where slight risk of baby requiring care in a neonatal unit	39	25
Parents where high risk of baby requiring care in a neonatal unit	54	35

(Percentage total exceeds 100% as midwives could tick more than one response)

Additional comments

Throughout the questionnaires midwives were given opportunities to write additional comments and 109 of the 155 respondents (60%) did so. The comments have been summarised collectively.

Midwives indicated that, in addition to the options given in the questionnaire, they included information such as the accommodation available to parents, breast-feeding opportunities, how to use the section in the woman's care plan specifically related to her baby and transfer or transport. There were two community midwives who indicated that they used photographs of babies who had been cared for in neonatal units to illustrate the information they gave and one invited a mother with experience of a neonatal unit to speak to a class she ran. In two community settings the Health Visitor gave the preparation for neonatal care, rather than the midwives.

The labour ward midwives indicated that the amount and depth of information given depended on the stage of labour: the earlier in labour, the greater scope for information giving.

Midwives from three of the groups indicated that they tailored the information they gave to meet the individual needs of the women, but gave no further information on how this was achieved. NNU midwives may also tailor information to individual needs, but they did not indicate this specifically in their additional comments.

DISCUSSION

The findings of the survey reveal that the majority of midwives in the sample gave some information about NNU care. However, if the information is given in normal preparation for parenthood classes/sessions at a median gestation of 28 weeks, this may mean that some women give birth to a preterm baby who requires NNU care before information is given. This is also true for women who do not attend for any antenatal education, where the 'inverse care law' (Rooney 1992 p. 13) may apply. This law suggests that those who are most at risk of poor pregnancy outcomes are also least likely to take advantage of the antenatal services available to them, such as midwifery care, antenatal clinics and classes. Any preparation about neonatal care is then most likely to be given by hospital-based midwives and may have to be given quickly.

It was evident that some midwives give information about NNU care during the first trimester. If the baby does eventually require NNU care, the parents may have forgotten some or all of this information. However, reinforcement later in pregnancy, or information given by hospital-based midwives, may increase their level of knowledge and understanding.

Information about NNU care was given by ten midwives at 'booking', i.e. during their first contact with the woman, at whatever gestation this was.

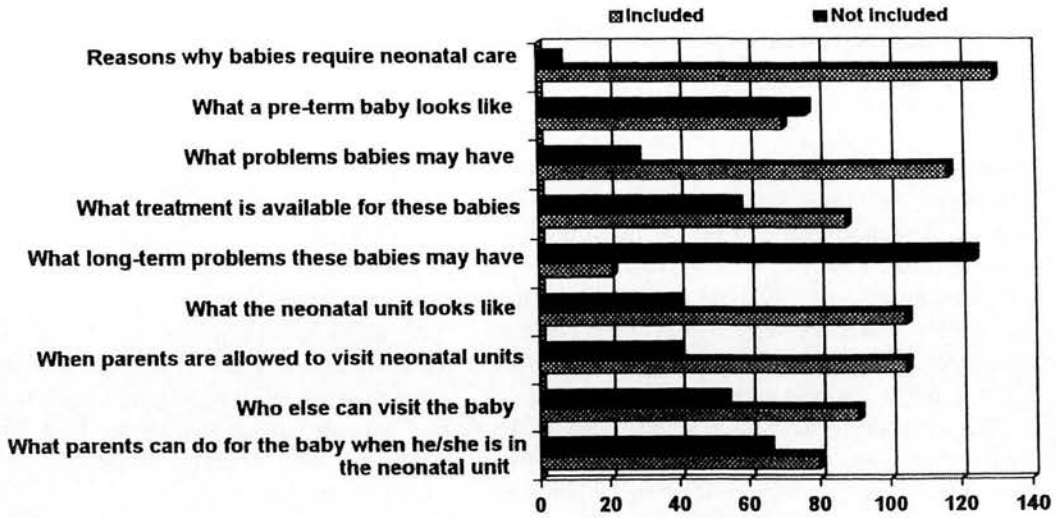

Fig. 1 Information given by midwives (n = 153).

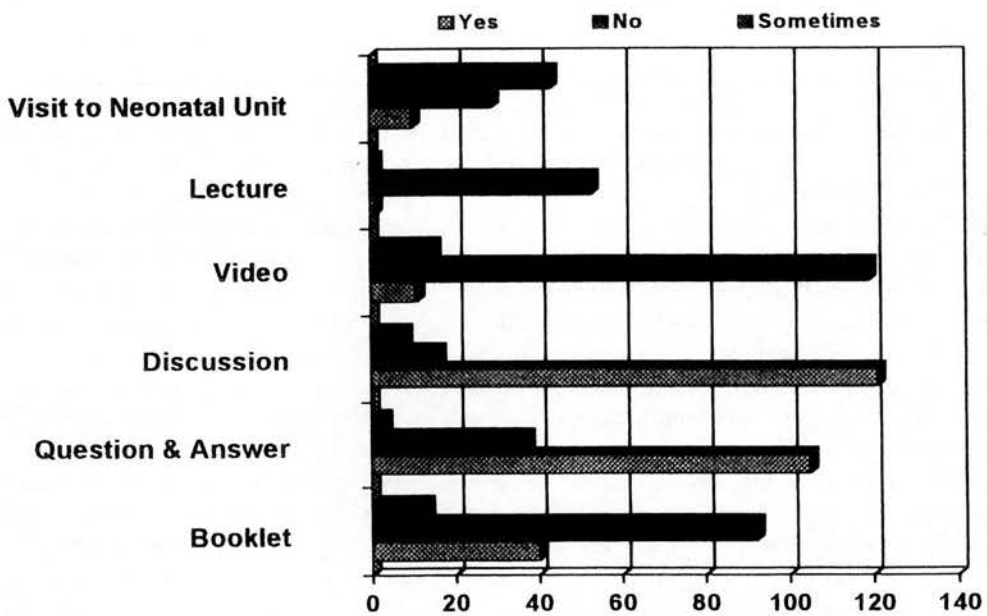

Fig. 2 Methods used to give information (n = 153).

While it is encouraging that such information is given, its inclusion with all that constitutes a 'booking' interview, could result in an overload of information for the woman, with retention of very little (Methven 1989, Thomson 1993). This is not to be recommended, unless the woman asks directly for such information. It may also mean that information is given too early in the pregnancy for the woman to feel prepared if her baby does require NNU care.

The actual content of the information varied but the majority of midwives included most of the suggested topics. The exclusion by most midwives of the long-term problems the babies may have would appear quite reasonable, as such information can only be accurately discussed once a diagnosis has been made, usually after the birth.

Studies have shown that parents can be quite distressed at the initial sight of their baby in a NNU, especially if the baby is preterm (McHaffie 1987, Niven et al 1993). Although not all babies in NNUs are preterm, it would seem appropriate that if the baby was known to be preterm, midwives could prepare the parents by giving information about what the baby would look like. This preparation may help reduce the parents' distress (Parkes 1975, Elbourne et al 1989, Oetker-Black 1993). It was surprising, therefore, to note that it was the second least common topic included by midwives.

Much of the research into what stresses parents in NNU has concluded that the NNU environment is particularly stressful (Affonso et al 1992, Way 1993). This survey revealed that most midwives include information on what the NNU looks like and efforts are made to have women visit the NNU, especially if there is a high risk of their baby being cared for there. These strategies may reduce the stress parents experience. At least one regional referral NNU has its own video which can be shown

to women who are unable to visit the unit. However, it was evident that not all the midwives in the catchment area were aware of, nor used the video.

Studies have shown that parents want to be involved in their baby's care, but can feel unsure of what they are allowed to do and when they can do it (McHaffie 1987, Bass 1991). Such information was less often included in preparation than might be expected. However, one midwife indicated the use of a specific section in the mother's care plan where the mother can write information about her baby when he is in NNU. This strategy may help the mother to feel involved in her baby's care.

Generally, the methods used to share the information appeared appropriate for the circumstances and resources of the midwives. However, audio-visual aids, such as booklets and videos, seemed to be used less often than might have been expected. Supplementing verbal information giving with supporting literature has been shown to be a useful teaching strategy (Quinn 1995). There is a range of booklets on NNU care generally available to midwives in their practice and many NNUs have developed their own booklets. These specific booklets could be used by midwives with parents, especially if a visit to the NNU is not possible.

One of the main limitations of the study was the fact that the questionnaires may not have been sufficiently well validated prior to the survey, especially the one designed for midwives responsible for preparation for parenthood classes. If the emphasis on 'classes' had been less, more midwives offering one-to-one sessions rather than classes may have considered the questionnaire more relevant to them and participated in the survey. Had the number of respondents been increased, the representativeness of the sample and the findings would also have been increased. However, the sample of midwives involved in preparation for parenthood classes was large in comparison to other groups, and the results do reflect the information shared in some one-to-one sessions as well as in classes.

In order that the questionnaire was quick and easy to complete, the question and answer options were deliberately kept simple and few. This may have resulted in a lack of depth in the information being reported (Barker 1996). However, the respondents were given the opportunity to comment further and 60% took advantage of this, thus adding to the basic information requested.

The method of gaining access to the population was through the Directors of Midwifery Service. Although replies were received from each director, it was evident that not all could suggest midwives in each of the four groups. Some midwives were not under the jurisdiction of a Director of Midwifery Service, and accessing the manager responsible in some NHS Trusts proved impossible within the time available. Therefore, although each Health Board is represented in the sample, some individual areas are not.

This access method limits the population, but it allowed individually addressed letters and questionnaires to be sent, which Dillman (1983) suggests increases the response rate. It also allowed specifically targeted reminders to be sent, which would not have been possible if anonymous questionnaires had been sent to each director or NHS Trust for distribution. This latter option would also have necessitated a more generic style of the questionnaire to ease distribution to all midwives.

Although specific questions referred to parents, most midwives confined their answers to women rather than parents. It is, therefore, unclear with what aspects of preparation men are involved. Exploration of this could be incorporated into the design of a planned subsequent study.

In summary, the majority of midwives sampled offered information about NNU care during pregnancy. The timing of giving information during pregnancy varied, with some women possibly receiving it too early for their needs and others not receiving it until after their high-risk admission to hospital. Some women may not receive any information. If it is appropriate to give information to all pregnant women, consideration will have to be given as to how to access them and to the most appropriate time for information to be given.

Midwives included many aspects of information about NNU care, using a variety of methods. It was evident from the additional comments made that many midwives also tailor the content and methods of giving information to a woman's needs.

More input on what a preterm baby looks like could be included, possibly when discussing the progress of fetal growth at each antenatal examination, rather than as a specific topic. Helping parents understand what the NNU looks like and what parents can do for their baby while receiving NNU care could be achieved through the use of a video, either general or specific to a NNU. Supplementing verbal information with appropriate literature is to be recommended. Interactive computer technology may be a suitably innovative strategy for this type of education.

Having established the current nature of the information given about NNU care, further research is planned. A study is being designed to examine the extent to which information giving about NNU care prepares parents for, and meets the needs of parents whose baby requires NNU care. The study will also allow comparison of 'prepared' and 'unprepared' parents in respect of their levels of anxiety, their behaviours and their initial interactions with their baby. The variations in the information given by midwives will allow for further comparisons to be made between parents given different levels of information in different ways.

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Appendix 3

Summary of studies critiqued in section 3.3.3

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
Smith et al 1969	mothers	35 mothers of preterm babies matched with 35 mothers of term babies	One investigator-developed structured interview on their feelings about pregnancy and the baby with each mother by a psychiatrist	3-5 days postnatally	Descriptive Inferential statistical tests	No significant differences between mother of preterm and term babies in respect of mood, and acceptance of or concern about the baby
Choi 1972	mothers	20 mothers of premature babies matched with 20 mothers of full size babies	One investigator-developed structured questionnaire, with opportunities for expression of feelings by the mother, to assess levels of anxiety and depression administered by the investigator	3-5 days postnatally	Descriptive Correlation	The lower the gestation and the lower the birth weight, the higher the level of depression and anxiety in mothers of premature babies. No such correlations in mothers of full-size babies.

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
Harper et al 1976	Parents	91 parents of preterm and term babies whose admission was longer than 2 weeks	Investigator-developed 63 item multiple choice and discussion questionnaire on social, psychological, medical and financial factors 4 categories (numbered in summary of results column) determined scoring system depending on whether answer was positive or negative Infant Morbidity Score	At least 2 weeks after admission (unclear exactly when)	Descriptive Correlation	**1 Infant contact**: frequent and long visits, 50% visited daily, 1% visited less frequently than once per week, more than 60% spent 1-4 hours visiting and 82% spent most or all of that time with the baby. 90% cared for the baby, 41% felt anxious doing so, mothers did more nurturing activities. **2 Nursery** environment reaction: 7% were dissatisfied with staff, 30% had negative reactions to other babies, 23% feared the equipment used on other babies and 36% were reassured by the equipment used on their baby. **3 Parental anxiety**: parents were highly anxious throughout the admission, mothers were more anxious than fathers, highest anxiety was experienced on learning about the baby's condition, 57% felt denial, guilt, rejection or fear, yet only 44% had such feelings of anxiety when seeing their baby for the first time. **4 Infant morbidity**: the more seriously ill the baby was, the more anxiety was experienced, fathers had a higher correlation. Parents still visited despite the degree of illness except in 3 instances when the baby was terminally ill and the parents did not return to visit. The more contact there was, the more anxious parents were, especially the mother. 85% of parents felt holding the baby made the baby feel more secure and loved, 44% felt care improved when they were present, so they continued to place themselves in an anxiety provoking situation for the sake of their baby.

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
Jeffcoate et al 1979a	Mothers and fathers	17 mothers and 13 fathers of preterms and 17 mothers and 12 fathers of term babies	One investigator-developed semi-structured interview with each parent Neonatal Perception Inventory	At an average age of 53 weeks for preterm babies and 51 weeks for the term babies	Descriptive	Preterm group parents saw, touched and held their babies later 1 baby in preterm group had suffered NAI and one "failed to thrive" Fathers all felt love for their baby within 2 weeks but 8 mothers of preterm babies had not felt this for 2 months. This was linked to the delay in holding their babies 60% Preterm group mothers perceived their baby as worse than the average baby Parents of preterm babies had experienced extreme anxiety and fear. 10 mothers and 6 fathers (60%) reported fearing the baby would die. Anxiety persisted as more parents of preterm babies were reluctant to leave their baby with a babysitter (vulnerable child syndrome)
Jeffcoate et al 1979b	Mothers and fathers	17 mothers and 13 fathers of preterms and 17 mothers and 12 fathers of term babies	One investigator-developed semi-structured interview with each parent Neonatal Perception Inventory	At an average age of 53 weeks for preterm babies and 51 weeks for the term babies	Descriptive	Mothers of preterm babies felt numb, it was someone else's baby, guilt, shocked at sight of baby Mothers had more negative feelings than fathers in both groups Fathers were not expected to participate in care

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
Blumberg 1980	Mothers	100 mothers of preterm and term babies who were at no risk to high risk	Neonatal risk category Investigator-developed structured interview Maternal Attitude to Pregnancy Instrument Embedded Figures Test for cognitive style Wechsler Adult Intelligence Scale for verbal intelligence Depression Adjective Check Lists for pre-pregnancy and postnatal comparison State-Trait Anxiety Inventory for usual and postnatal comparison Neonatal Perception Inventory	1-5 days postnatally	Descriptive Multiple regression Correlation	Neonatal Risk: the higher the risk, the higher the levels of depression and anxiety, and the more negative were the perceptions of their baby Maternal Attitude: negative attitudes towards pregnancy and childbirth were associated with higher levels of anxiety, possibly related to higher trait anxiety, but not to depression or negative perceptions. Cognitive style was not related to postnatal adjustment. Younger mothers were more anxious than older mothers. Mothers who had caesarean sections had more positive perceptions of their babies than mothers having normal births. High risk infants result in more psychological stress for mothers, in the form of an acute emotional crisis

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
Trause and Kramer 1983	Mothers and fathers	38 parents of 19 low risk preterm babies matched with 28 parents of 14 healthy term babies	Parental Perception Inventory (PPI) Parental Adjustment Scale (PAS)	Within 7days of birth (PPI only), and at one and seven months after the baby's discharge (PPI and PAS)	Descriptive ANOVA Chi square test	In the first week after birth more parents of preterm babies cried, felt more helpless, were more worried about subsequent pregnancies, and their ability to cope, and wanted to talk with staff more. Mothers of preterm babies felt guilty, and were worried about losing touch with reality. Mothers were more likely to report crying, feeling helpless, feeling worried about their ability to cope or fearing losing touch with reality. By one month after discharge more mothers of term babies cried and did not want to be left alone. More mothers reported thinking more about their baby, crying, wanting to be held more, feeling neglected, and wanting more time with their partner. At one and seven months after discharge, more mothers continued to report thinking more about their baby, and crying. Fathers were more concerned about their partner's ability to cope than were the mothers. Parents of preterm babies became increasingly sensitive to each other's needs over time while the parents of term babies showed an initial increase followed by a decrease in sensitivity to each other.

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
Gennaro 1986	Mothers	40 mothers of preterm babies	Investigator-developed demographic and obstetric data profile State Scale of the State-Trait Anxiety Inventory Means-End Problem-Solving Procedure Neonatal Risk Categorization	One 40 minute session at the end of the first week of the baby's admission.	Descriptive t-test	All mothers were very anxious regardless of how sick their baby was and what their previous obstetric history had been. Those mothers with higher problem-solving abilities reported heightened anxiety than those mothers with lower problem-solving abilities.
McHaffie 1987	Mothers	21 mothers of first very low birth weight babies	Investigator-developed interview: six semi-structured schedules Neonatal Perception Inventory Diaries kept by the mother on events and feelings of significance to her Demographic record	Six sessions from 1 week after birth to 3 months after discharge	Qualitative data: categories Quantitative data: descriptive	6 phases, 1-3 in hospital and 4-6 at home 1. shock and fear with anticipatory grief and grief for the hoped-for baby 2. anxious waiting with depression and fluctuating emotions 3. positive anticipation of going home 4. anxiety and lack of confidence 5. increasing confidence but exhausted 6. confident

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
Pederson et al 1987	Mothers	130 mothers of 144 preterms	Infant morbidity score Investigator developed structured interview categorised into 10 areas with 3 related to stress indicators, 4 related to differences in feelings between those expected with full term birth and those experienced and 3 related to concerns over baby's survival and caring for baby at home	Near end of baby's stay in NNU	Descriptive t test Chi-square Correlation	Having a baby in NNU was stressful even if the baby was well Mother more worried about the baby than self Level of stress was independent of social support Support was from husbands, grandparents and church

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
Gennaro 1988	Mothers	41 mothers of preterm babies matched with 41 mothers of term babies (16 mothers of preterms and 10 mothers of term babies completed the full 7 sections of the data collection)	Neonatal Risk Categorization Schema State Scale of the State-Trait Anxiety Inventory Depression Adjective Check List (specific qualitative data collected during weeks4 and 5)	During the first postnatal week all 3 tools were used, then the last 2 were mailed weekly for 6 further weeks	Descriptive Multivariate analysis of variance	In week 1, mothers of preterm babies were more depressed and anxious than mothers of term babies, regardless of the risk category of the baby. There was no significant difference between mothers of preterm babies and term babies and the levels of anxiety and depression experienced from the second to the seventh week Parity and type of delivery had no influence on level of depression nor anxiety. About 1 month after the birth mothers expressed negative comments due to the absence of family support persons, sleeplessness and adjustments to their new role.

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
Gennaro et al 1990	Mothers	27 mothers of very low birth weigh babies and 35 mothers of low birth weight babies	Multiple Affect Adjective Check List – Revised State Form (MAACL-R) Neonatal Morbidity Scale (NMS)	NMS at 3 days and at 7 days of life MAACL-R first week of life, week following discharge, week baby was 40 weeks adjusted age, monthly until 5 months adjusted age	Descriptive Correlation	all mothers experienced their greatest anxiety in the first week after the birth the VLBW babies were significantly more sick than the LBW babies and initially their mothers experienced higher levels of anxiety and depression than did the mothers of the LBW babies by three to four months adjusted age, the mothers of the LBW babies became more depressed and anxious than the mothers of the VLBW no correlation was found between mothers who had the sickest babies and those with the highest levels of anxiety and depression.
Gennaro and Stringer 1991	Mothers	63 mothers of very low birth weigh babies	Multiple Affect Adjective Check List – Revised State Form (MAACL-R)	MAACL-R first week of life	Descriptive Correlation	All mothers experienced anxiety in first week. No significant relationship between level of anxiety and time of discharge or growth and development in first year. Those mothers with highest level of anxiety used acute care services for their baby most often

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
Shields-Poe and Pinelli 1997	Parents	212 parents from one neonatal unit and one perinatal unit in Canada	Completed by parents • **PSS:NICU** • **STAI** • **Life Events Scale** assessing stressful event in previous year • **Parent questionnaire** researcher developed to record data re social support, previous pregnancy outcomes, demographic data, perceptions of the baby's illness Completed by research nurse • **Neonatal morbidity scale** assessed from records and researcher developed	One 45 minute session between 2 and 21 days after the birth	Descriptive Chi-square, t-test, Correlation Multiple regression	Fewer mothers in neonatal unit were prepared for the appearance of baby or sights and sounds of NNU Preparation = previous experience in NNU, a tour of NNU or having worked in NNU **Predictive of high PSS:NICU scores were:** high trait anxiety in mothers high perceived morbidity scores in mothers and fathers **Predictive of high PSS:NICU scores in the interaction with baby dimension were:** mothers with high trait anxiety, with perceptions of the baby being sick, who were older, and who first saw their baby in NNU fathers with perceptions of the baby as being sick and who attended religious services occasionally **Predictive of high PSS:NICU scores in the baby's appearance dimension were:** mothers who were single and who perceived the baby as being sick fathers with discrepant perceptions of how sick the baby was and those who had not wanted the pregnancy

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
			• **Baby data sheet** researcher developed for demographic data			**Predictive of low PSS:NICU scores in the sights and sounds dimension were:** mothers with high trait anxiety and with perceptions of the baby as being sick **fathers who had interactions with a social worker** **Predictive of high PSS:NICU scores in the sights and sounds dimension were:** fathers with high trait anxiety scores and who saw baby in NNU in first 24 hours **Predictive of low PSS:NICU scores in the staff behaviour and communication dimension were:** mothers with high trait anxiety and with perceptions of the baby as being sick fathers who perceived the baby to be sicker, those who had not wanted the pregnancy and the longer the baby was in the NNU

Author/s	Subjects	Sample	Data Collection Tools	Time of Data Collection	Analysis	Summary of Results
						STAI Levels Trait anxiety scores similar to normative data Both fathers and mothers had higher state anxiety than the normative data, with mothers more anxious than fathers mothers with higher state anxiety had higher trait anxiety, higher levels of education and higher PSS:NICU scores fathers with higher state anxiety had higher trait anxiety, perceived the baby to be sick and had higher PSS:NICU scores The stress levels the parents experienced were not associated with other stressful life events Most parents had most social support from partner, family and friends but little from health professionals The perceived morbidity of the baby was the most stressful aspect for parents

Appendix 4

Parents' introductory letter /subject information sheet

Department of Nursing Studies
University of Edinburgh
3rd Floor, 12 Buccleuch Place
Edinburgh.
0131 343 7954

Dear Parent,

May I congratulate you on the birth of your baby.

I work as a midwife teacher in Lothian, specialising in teaching neonatal intensive care. I am also a PhD student at the University of Edinburgh and would like to study the very important area of how parents feel when their baby is being cared for in a neonatal unit and what preparation they have had for this. Although you and your baby are unlikely to benefit directly, it is hoped that the information collected during the study will improve care in the future for parents during pregnancy and during their baby's stay in a neonatal unit.

The study, "Prenatal Preparation of Parents for Neonatal Care", is in two stages. When you receive this letter, you will have time to think about participating, as I will not make contact with you for at least another 24 hours. You may want to ask me further questions at that time before consenting or, if you want to speak with someone who knows about the study but is not involved in it, you can contact Miss Penny Newmarch, Clinical Service Manager, Neonatal Unit, Simpson Memorial Maternity Pavilion, Edinburgh. She will be able to give you further information and advice.

If you or your partner choose to participate in the first stage of the study and give your written permission, you will be asked to complete a short questionnaire within the first 5 days after your baby's birth, which should take no more than 20 minutes. I would also like to record information about your baby from his/her records.

A small number of parents will participate in the second stage of the study. If you or your partner are invited to participate in the second part and give your written permission, it will involve being interviewed by me at a convenient place and time for you. The interview will last no more than 45 minutes and I would like to tape record it.

All the information you share with me will be kept confidential. Everything will be kept in a secure location and will not be available to anyone other than myself and my two supervisors at the University. There will be a final written report which will

not identify you or your baby by name, nor will your particular circumstances be identifiable. You can request to receive a copy of the final report.

I would be very grateful if you (and your partner if possible) would agree to participate in this study. There is no obligation for you to do so. However, even if you consent, you are free to withdraw from the study at any point you want to. Whether you choose to take part or choose not to take part in this important study, it will have no effect at all on the care you, your partner and your baby would normally receive.

If you choose to participate in the study, I will inform your General Practitioner of your participation.

Thank you for reading this letter and for any help which you are able to give me.

Yours sincerely

Mrs Claire Greig

Appendix 5

Consent form for parents
(First Stage)

TITLE OF THE PROPOSED RESEARCH:
Prenatal Preparation of Parents for Neonatal Care: a comparative descriptive study

NAME OF INVESTIGATOR: Mrs Claire Greig

ADDRESS: Department of Nursing Studies, University of Edinburgh, 12 Buccleuch Place, Edinburgh.

TELEPHONE: 0131 343 7954

FURTHER INFORMATION IS AVAILABLE FROM: Miss Penny Newmarch, Clinical Service Manager, Simpson Memorial Maternity Pavilion, Edinburgh. She is not involved in the study.

- **I agree to participate in the first part of this study which involves completion of a questionnaire and allowing the researcher access to my baby's records.**
- **I have read this consent form and Introductory Letter/Subject Information Sheet and had the opportunity to ask questions about them.**
- **I agree for notice to be sent to my General Practitioner about my participation in this study.**
- **I understand that I am under no obligation to take part in this study and that a decision not to participate will not alter the care that I or my partner or my baby would normally receive.**
- **I understand that I have the right to withdraw from this study at any stage and that to do so will not affect the care that I or my partner or my baby would normally receive.**
- **I understand that this is non-therapeutic research from which I, my partner or my baby cannot expect to derive any benefit.**

Signature of Subject: .....

Name of Subject: .....

Signature of Investigator: .....

Date: .....

Four copies to be made

Top copy to be retained by Investigator; Second copy to be retained by subject;
Third copy to be sent to subject's General Practitioner; An additional copy to be filed in any relevant hospital case notes

Appendix 6

NNU staff letter of introduction / subject information sheet

Department of Nursing Studies
University of Edinburgh
3rd Floor, 12 Buccleuch Place
Edinburgh

Dear Colleague,

I am a midwife teacher in Lothian, specialising in teaching neonatal care. I am also a PhD student at the University of Edinburgh and would like to study the very important area of how parents feel when their baby is being cared for in a neonatal unit and what support staff give them in the first days after admission. It is hoped that the information collected during the study will improve care in the future for parents during pregnancy and during their baby's stay in a neonatal unit.

The study, "Prenatal Preparation of Parents for Neonatal Care", is in two stages. When you receive this letter, you will have time to think about participating, as I will not make contact with you for at least another 24 hours. You may want to ask me further questions at that time before consenting or, if you want to speak with someone who knows about the study but is not involved in it, you can contact Miss Penny Newmarch, Clinical Service Manager, Neonatal Unit, Simpson Memorial Maternity Pavilion, Edinburgh. She will be able to give you further information and advice.

If you choose to participate and give your written permission, you will be asked to complete a short questionnaire which should take no more than 20 minutes.

Participating staff members will be invited at a later date to participate in the second stage of the study. If you are invited and give your written permission, it will involve you attending a group interview session with other participating staff and myself. The group interview, also known as a focus group, will last no more than one hour and I would like to tape record it.

All the information you share with me will be kept confidential. Everything will be kept in a secure location and will not be available to anyone other than myself and my two supervisors at the University. The final written report will not identify you by name, nor will your particular circumstances be identifiable. You can request to receive a copy of the final report.

I would be very grateful if you would agree to participate in this study. There is no obligation for you to do so. However, even if you consent, you are free to withdraw from the study at any point you want to. Whether you choose to take part or choose not to take part in this important study, it will have no effect at all on your position in the neonatal unit.

Thank you for reading this letter and for any help which you are able to give me.

Yours sincerely

Mrs Claire Greig

Appendix 7

Consent form for NNU staff
(First Stage)

TITLE OF THE PROPOSED RESEARCH:
Prenatal Preparation of Parents for Neonatal Care: A comparative descriptive study

NAME OF RESEARCHER:
Mrs Claire Greig

ADDRESS:
Department of Nursing Studies, University of Edinburgh,
12 Buccleuch Place, Edinburgh

TELEPHONE:
0131 343 7954

- **I agree to participate in the first part of this study which involves completion of a questionnaire.**
- **I have read this consent form and Introductory Letter/Subject Information Sheet and had the opportunity to ask questions about them.**
- **I understand that I am under no obligation to take part in this study and that a decision not to participate will not affect my position in the neonatal unit.**
- **I understand that I have the right to withdraw from this study at any stage and that to do so will not affect my position in the neonatal unit.**
- **I understand that this is non-therapeutic research from which I cannot expect to derive any benefit, although future parents may do so.**

Signature of Subject: .....

Name of Subject: .....

Signature of Researcher: .....

Date: .....

Two copies to be made
Top copy to be retained by Researcher
Second copy to be retained by subject

Appendix 8

Consent form for parents (Second Stage)

TITLE OF THE PROPOSED RESEARCH:
Prenatal Preparation of Parents for Neonatal Care: a comparative descriptive study

NAME OF INVESTIGATOR: Mrs Claire Greig

ADDRESS: Department of Nursing Studies, University of Edinburgh, 12 Buccleuch Place, Edinburgh.

TELEPHONE: 0131 343 7954

FURTHER INFORMATION IS AVAILABLE FROM: Miss Penny Newmarch, Clinical Service Manager, Simpson Memorial Maternity Pavilion, Edinburgh. She is not involved in the study.

- **I agree to participate in the second part of this study which involves being interviewed by the researcher.**
- **I have read this consent form and Introductory Letter / Subject Information Sheet and had the opportunity to ask questions about them.**
- **I agree for notice to be sent to my General Practitioner about my participation in this study.**
- **I understand that I am under no obligation to take part in this study and that a decision not to participate will not alter the care that I or my partner or my baby would normally receive.**
- **I understand that I have the right to withdraw from this study at any stage and that to do so will not affect the care that I or my partner or my baby would normally receive.**
- **I understand that this is non-therapeutic research from which I, my partner or my baby cannot expect to derive any benefit.**

Signature of Subject: .....

Name of Subject: .....

Signature of Investigator: .....

Date: .....

Four copies to be made
Top copy to be retained by Investigator; Second copy to be retained by subject;
Third copy to be sent to subject's General Practitioner; An additional copy to be filed in any relevant hospital case notes

Appendix 9

Letter to NNU staff (second stage)

Napier University
13 Crewe Road South
Edinburgh EH4 2LD

Dear

As you are aware, I am currently undertaking a study of the very important area of how parents feel when their baby is being cared for in a neonatal unit and what support staff give them in the first days after admission. You have already kindly participated in the first stage of this study in which you completed a short questionnaire. I would now like to invite you to participate in the second part of the study. This will involve you attending a group interview session with other a small number of other staff who participated and myself. At the group interview you will be asked to give your written consent. The group interview, also known as a focus group, will last no more than one hour and I would like to tape record it. Cold drinks will be available.

The group interviews will be held at the above address on the following days and times. **If you are able to participate, please indicate your preferred day and time in both sections on the enclosed sheet. Keep the top section for yourself, cut off the bottom section and return it, as soon as possible, to me in the envelope provided via the hospital mail.**

If you want to ask me further questions before consenting, please contact me by phone on 0131 343 7954/7900 or, if you want to speak with someone who knows about the study but is not involved in it, you can contact Miss Penny Newmarch, Clinical Service Manager, Neonatal Unit, Simpson Memorial Maternity Pavilion, Edinburgh. She will be able to give you further information and advice.

All the information you share with me will be kept confidential. Everything will be kept in a secure location and will not be available to anyone other than myself and my two supervisors at the University. The final written report will not identify you by name, nor will your particular circumstances be identifiable. You can request to receive a copy of the final report.

I would be very grateful if you would agree to participate in this part of the study. There is no obligation for you to do so. However, even if you attend the group interview and give your consent, you are free to withdraw from the study at any point you want to. Whether you choose to take part or choose not to take part in this important study, it will have no effect at all on your position in the neonatal unit.

Thank you for reading this letter and for any help which you are able to give me.

Yours sincerely

Mrs Claire Greig

The names of the participating staff were picked at random from a hat. The first half received the first of the following sheets with the letter. The remainder received the second of the following sheets with the letter.

Group Interviews will be held at Napier University,
13 Crewe Road South, Edinburgh in Room G44 on:

Wednesday 5th May 1500 - 1600
or
Monday 10th May 1300 - 1400
or
Tuesday 11th May 1100 - 1200

- **Please indicate your preferred day and time in the two sections below.**
- **Retain the top section for your reference and as a reminder of when to attend.**
- **Having written your name in the bottom section, cut off the bottom section and return it, as soon as possible, to me in the envelope provided.**

Retain this section.

I will be able to attend a group interview on:

Wednesday 5th May 1500 - 1600
or
Monday 10th May 1300 - 1400
or
Tuesday 11th May 1100 - 1200

(Delete as appropriate)

cut along this line

Complete and return this section in the envelope provided.

I will be able to attend a group interview on:

Wednesday 5th May 1500 - 1600
or
Monday 10th May 1300 - 1400
or
Tuesday 11th May 1100 - 1200

(Delete as appropriate)

NAME:

Group Interviews will be held at Napier University,
13 Crewe Road South, Edinburgh in Room G44 on:

Wednesday 5th May 1300 - 1400
or
Monday 10th May 1500 - 1600
or
Tuesday 11th May 0900 - 1000

- **Please indicate your preferred day and time in the two sections below.**
- **Retain the top section for your reference and as a reminder of when to attend.**
- **Having written your name in the bottom section, cut off the bottom section and return it, as soon as possible, to me in the envelope provided.**

Retain this section.

I will be able to attend a group interview on:

Wednesday 5th May 1300 - 1400
or
Monday 10th May 1500 - 1600
or
Tuesday 11th May 0900 - 1000

(Delete as appropriate)

cut along this line

Complete and return this section in the envelope provided.

I will be able to attend a group interview on:

Wednesday 5th May 1300 - 1400
or
Monday 10th May 1500 - 1600
or
Tuesday 11th May 0900 - 1000

(Delete as appropriate)

NAME:

Appendix 10

Consent form for NNU staff (second stage)

TITLE OF THE PROPOSED RESEARCH:
Prenatal Preparation of Parents for Neonatal Care : A comparative descriptive study

NAME OF RESEARCHER:
Mrs Claire Greig

ADDRESS:
Department of Nursing Studies, University of Edinburgh,
12 Buccleuch Place, Edinburgh

TELEPHONE:
0131 343 7954

- **I agree to participate in the second part of this study which involves participation in a focus group with other neonatal staff members and the researcher.**
- **I have read this consent form and Introductory Letter/ Subject Information Sheet and had the opportunity to ask questions about them.**
- **I understand that I am under no obligation to take part in this study and that a decision not to participate will not affect my position in the neonatal unit.**
- **I understand that I have the right to withdraw from this study at any stage and that to do so will not affect my position in the neonatal unit.**
- **I understand that this is non-therapeutic research from which I cannot expect to derive any benefit, although future parents may do so.**

Signature of Subject: .....

Name of Subject: .....

Signature of Researcher: .....

Date: .....

Two copies to be made

Top copy to be retained by Researcher
Second copy to be retained by subject

Appendix 11

State Trait Anxiety Inventory

SELF-EVALUATION QUESTIONNAIRE **STAI Form Y-1**

Please provide the following information:

Name_____ **Date**_____ **S**_____

Age_____ **Gender** *(Circle)* **M F** **T**_____

DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate value to the right of the statement to indicate how you feel *right* now, that is, at *this moment.* There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.		Not at all	Somewhat	Moderately so	Very much so
1	I feel calm	1	2	3	4
2	I feel secure	1	2	3	4
3	I am tense	1	2	3	4
4	I feel strained	1	2	3	4
5	I feel at ease	1	2	3	4
6	I feel upset	1	2	3	4
7	I am presently worrying over possible misfortunes	1	2	3	4
8	I feel satisfied	1	2	3	4
9	I feel frightened	1	2	3	4
10	I feel comfortable	1	2	3	4
11	I feel self-confident	1	2	3	4
12	I feel nervous	1	2	3	4
13	I am jittery	1	2	3	4
14	I feel indecisive	1	2	3	4
15	I am relaxed	1	2	3	4
16	I feel content	1	2	3	4
17	I am worried	1	2	3	4
18	I feel confused	1	2	3	4
19	I feel steady	1	2	3	4
20	I feel pleasant	1	2	3	4

 STAIS-AD Test Form Y

SELF-EVALUATION QUESTIONNAIRE
STAI Form Y-2

Name_____ **Date**_____

DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate value to the right of the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.		Almost never	Sometimes	Often	Almost always
21	I feel pleasant	1	2	3	4
22	I feel nervous and restless	1	2	3	4
23	I feel satisfied with myself	1	2	3	4
24	I wish I could be as happy as others seem to be	1	2	3	4
25	I feel like a failure	1	2	3	4
26	I feel rested	1	2	3	4
27	I am "calm, cool, and collected"	1	2	3	4
28	I feel that difficulties are piling up so that I cannot overcome them	1	2	3	4
29	I worry too much over something that really doesn't matter	1	2	3	4
30	I am happy	1	2	3	4
31	I have disturbing thoughts	1	2	3	4
32	I lack self-confidence	1	2	3	4
33	I feel secure	1	2	3	4
34	I make decisions easily	1	2	3	4
35	I feel inadequate	1	2	3	4
36	I am content	1	2	3	4
37	Some unimportant thought runs through my mind and bothers me	1	2	3	4
38	I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
39	I am a steady person	1	2	3	4
40	I get in a state of tension or turmoil as I think over my recent concerns and interests	1	2	3	4

 STAIS-AD Test Form Y

Appendix 12

QUESTIONNAIRE FOR PARENTS

This questionnaire is part of a study about how parents feel when their baby is being cared for in a neonatal unit and what preparation they have had for this.

Please read the questions and try to answer them either by ticking the appropriate box or boxes, filling in the blanks, or writing your own thoughts as fully as you can. If you wish not to answer a question, skip it and go onto the next one.

All information provided by you will be treated confidentially and destroyed after completion of the study. Neither you, your partner nor your baby will be identifiable in any written report.

Thankyou again for your help in this study, it is much appreciated.

1 What is your given (first) name? _____

2 What is your family (surname) name? _____

3 What is your address? _____

_____

_____

_____

4 Please tick any box which contains a term that applies to your status:

single	married	divorced
separated	cohabiting	other

5 How old are you? _____ years _____ months

6 What age were you when you left secondary school? _____ years

7	What post-school education have you had? Please tick any box which contains a term which applies to you:	Further Education College	Higher Education College	University
		Professional Education Establishment	None	Other

8	Please tick any box which contains a term that applies to your status:					
	never employed	unemployed	self-employed	employed	full time	part time
	casual	housewife	house husband	other (specify)		

9	Did you expect your baby to be admitted to the NNU? Please tick the relevant box.	yes	no

10	If you expected your baby to be admitted, how long before he/she was born did you know that he/she would be admitted? Please tick the box which contains the one term which most closely applies to you:			
	minutes	hours	days	weeks

11	Have you had any experience of a neonatal unit before your baby's admission? Please tick the relevant box.	yes	no

13 During the pregnancy and before your baby was admitted to the neonatal unit, were you given any information about neonatal units? Please tick the relevant box.	yes	no

14 If you answered yes to question 13, how did you get this information? Please tick any box which contains a term that applies to you.

midwife	GP	obstetrician	health visitor	family	newspapers/ magazines
friends	a visit to the unit	neonatologist	television/films/ videos		other(please specify)

15 Please briefly explain what this information was.

16 What is your General Practitioner's name and address?

_____

_____

_____

_____

_____

Appendix 13

Data on the babies of participating parents (extracted from the records)

1 Surname _____

2 Gender

male	female

3 Date of birth _____

4 Date of admission to NNU _____

5 Gestation _____

6 Birth type

spontaneous vaginal	complicated
instrumental	operative

7 Birth weight _____

8 Main Diagnoses

9 Classification on

day 1 _____
day 2 _____
day 3 _____
day 4 _____
day 5 _____

(Intensive Care 1 (1), Intensive Care 2 (2), Special Care (SC), Died (D), Transferred to hospital (T), Transferred to ward (W), Transferred home (H).)

10 Other pertinent information

Appendix 14

Semi-structured interview schedule for the interview with parents

The main elements to be addressed within the interview will include:

What emotions the parents are feeling, within themselves and towards the baby.
What changes, if any, there have been in their emotions during the baby's admission.

Depending on their answers in the initial questionnaire,

a) there will be an exploration in more detail of:

- what experience of NNU they have previously had
- what preparation they had for their baby's admission
- how the preparation was undertaken
  from whom/what the preparation came
- what effect, if any, the preparation had on their feelings of preparedness for the baby's admission
- what effect, if any, the preparation had on their experiences thus far within the NNU
- would there be any way in which the preparation could better have prepared them

b) or there will be an exploration in more detail of:

- how prepared they felt for the baby's admission
- how prepared they felt for their experiences thus far in NNU
- in what ways, if any, could they have been better prepared
- if they suggest any ways, would they have taken the opportunities

How did they feel when they first saw their baby
How did they feel when they first saw him/her in NNU
What did they want to do first with their baby
Were they able to do this
If not, what did they do first

What contact they have had with their baby on each day since the first visit (seeing, touching, holding, talking with, sitting with, participating in care, etc.)
How do they feel about the (quantity and quality of) contact they have with their baby
How does the contact they have with their baby compare with what they expected to have with their baby

In what ways have NNU staff helped and hindered the contact they have had with their baby
Were they given instructions by NNU staff about what they could do and not do with their baby
(How did they feel about the instructions)
Were they given any choices about what contact they could have with their baby
(How did they feel about the choices)
Are there any ways in which NNU staff could have helped them to have the type of contact they wanted to have with their baby

How prepared do they feel for the remainder of their experience of NNU
(is this level of being prepared a result of the information given before the baby was born/was admitted to NNU and if not,)
How have they reached this level of being prepared
In what ways, if any, could they be better prepared
(if they suggest any ways - would they have taken the opportunities)

Appendix 15

Questionnaire for NNU staff

This questionnaire is part of a study about how parents feel when their baby is being cared for in a neonatal unit and what support NNU staff are required to give them in the first two days after the admission.

Please read the questions and try to answer them either by ticking the appropriate box or boxes, filling in the blanks, or writing your own thoughts as fully as you can. If you wish not to answer a question, skip it and go onto the next one.

All information provided by you will be treated confidentially and will be destroyed on completion of the study. You will not be identifiable in any written report.

Thankyou again for your help in this study, it is much appreciated.

1 What is your given (first) name? _____

2 What is your family (surname) name? _____

3 What is your status? Tick any box which contains a term which applies to you.

Midwife	Staff Nurse
Sister	Student

4 How long have you worked in this NNU? _____ years _____ months

5 What neonatal nursing training have you undertaken? Tick any box which contains a term which applies to you.

Neonatal Course	PSII module/s	ENB405
None	Other (please specify)	

6 In caring for the baby of _____ how many times have you had contact with the: mother? _____ father? _____

7 What contact have they had with their baby during the times you have been caring for him/her. Please tick any box containing a term which applies.

seeing	touching	holding	talking with
sitting with	participating in care (specify)		other

8 Which of these did you have to encourage them to do? Please tick any box containing a term which applies.

seeing	touching	holding	talking with
sitting with	participating in care (specify)		other

9 In what ways did you encourage them to achieve this contact?

10 How prepared for the admission of their baby to NNU do you think the parents were? Please explain your answer.

11 How would you rate the quantity and quality of contact these parents have with their baby?

12 Any other comments?

Appendix 16

OUR REF: 1702/97/6/11 YOUR REF:

LOTHIAN health

8 May, 1997

Mrs C Greig
Midwife Teacher
Napier University
13 Crewe Road
Edinburgh EH4 2LD

Dear Mrs Greig,

Request for Ethical Approval - 1702/97/6/11: Prenatal preparation of parents for neonatal care: A comparative descriptive study.

Thank you for submitting the above protocol for ethical approval. The Paediatrics/Reproductive Medicine Research Ethics Sub-Committee has considered this protocol and has granted ethical approval. This approval encompasses all aspects of the application including the Patient/Subject Information Sheet and other accompanying documentation.

Under the terms of the Scottish Office Home and Health Department Guidelines on Local Research Ethics Committees this decision has been notified to the NHS body under the auspices of which the research is intended to take place. It is that NHS body which has the responsibility of deciding whether or not the research should go ahead taking account of the advice of the Research Ethics Sub-Committee.

A condition of this approval is that you are required to notify the Sub-Committee, in advance, of any significant proposed deviation from the original protocol. Reports to the Sub-Committee are also required once the research is underway if there are any unusual or unexpected results which raise questions about the safety of the research.

In addition, researchers are required to report on success, or difficulties, in recruiting subjects in order to provide useful feedback on perceptions of the project among patients and volunteers.

DEACONESS HOUSE 148 PLEASANCE EDINBURGH EH8 9RS
TELEPHONE: 0131 536 9000 DIRECT DIAL: 0131 536 9028 FACSIMILE: 0131 536 9346

Please quote the above reference on all correspondence

The Paediatrics/Reproductive Medicine Research Ethics Sub-Committee is fully compliant with the International Committee on Harmonisation/Good Clinical Practice (ICH) Guidelines for the Conduct of Trials Involving the Participation of Human Subjects as they relate to the responsibilities, composition, function, operations and records of an Independent Ethics Committee/Independent Review Board. To this end it undertakes to adhere as far as is consistent with its Constitution, to the relevant clauses of the ICH Harmonised Tripartite Guideline for Good Clinical Practice, adopted by the Commission of the European Union on 17 January 1997. The following documents were included on the computer disk containing the guidelines and application form and are available on request:

- Membership List
- Standing Orders
- Statement of Compliance

Yours sincerely,

Val Stewart
Secretary
Paediatrics/Reproductive Medicine
Research Ethics Sub-Committee

Please quote the above reference on all correspondence

Appendix 17

Letter to General Practitioner

Department of Nursing Studies
University of Edinburgh
3rd Floor, 12 Buccleuch Place
Edinburgh.

0131 343 7954

Dear Dr

"Prenatal Preparation of Parents for Neonatal Care"

I work as a midwife teacher in Lothian, specialising in teaching neonatal intensive care. I am also a PhD student at the University of Edinburgh and am undertaking the above study of the very important area of how parents feel when their baby is being cared for in a neonatal unit and what preparation they have had for this. It is hoped that the findings of the study will improve care in the future for parents during pregnancy and during their baby's stay in a neonatal unit.

Your patient, has consented to participate in the first stage of the study which involves completion of a short questionnaire within the first 5 days after her/his baby's birth. Information about the baby will also be retrieved from hospital records. She/he has also / has not consented to participate in the second stage of the study which involves a tape recorded, 45 minute semi-structured interview.

All the information shared with me will be kept confidential. Everything will be kept in a secure location and will not be available to anyone other than myself and my two supervisors at the University. There will be a final written report which will not identify your patient or the baby by name, nor will particular circumstances be identifiable.

If you require further information, please contact me by phone or at the above address.

Yours sincerely

Mrs Claire Greig

Appendix 18

Schedule of questions for focus groups

1 In the questionnaires you answered in the first part of the study, I used the words "prenatal preparation for neonatal care" in relation to parents. When you read this what came to mind?

2 How would you prepare parents for neonatal unit care?

3 How do you know if a parent is prepared?

4 What differences do you find working with prepared and unprepared parents?

5 What do you think parents need when they visit the neonatal unit for the first two days?

6 Summary - Does this summary sound OK to you?

7 Did we miss anything?

Appendix 19

Summary of relevant biographical and situational data related to mothers, fathers and babies
(based on participating mothers)

The convention used to identify participants throughout the thesis (see introduction to chapter 12) is also used in this appendix, as are all other abbreviations. In relation to the STAI, S = state anxiety level and T = trait anxiety level. The symbol * beside the parents' identification indicates that the parents participated together.

Please also note that staff members were invited to participate if the mother consented to interview until m32, thereafter all staff members caring for babies of participating mothers were invited to participate.

m1 ***interviewed*** **unprepared**

seen on day 2, 37 year old married woman in a single room alone and in bed wearing nightclothes. Second baby. Feeling very uncomfortable with "split symphysis" and caesarean section wound, so happy to lie and chat. Stated she was glad to have someone to chat to. Had been investigated for complication of pregnancy but indicated no preparation or experience. Did know about NNUs from TV programmes. Unsure of whether anything could have prepared her. Confused and upset about admission. Father was at home with other child (10 years old), and she declined his participation.

STAI = S= 64 T=33

b1 named son 37 weeks admitted from labour ward and in special care for 3 days before transfer back to ward. Unexpected admission

cared for by staff who did not participate

m2 **information**

seen on day 4, 31 year old married woman in a two bedded room with another woman whose baby was in NNU. Wearing nightclothes. Second pregnancy, first baby. She seemed tired, very pale and had uncomfortable perineum, so knelt in bed. Indicated information about where and how her baby would be cared for had been given by midwife and obstetrician, but neither she nor her husband had not known what the would look like nor what she could do for her. Relieved that baby looked so well. Father not present and she declined his participation.

STAI = S= 36 T=31

b2 named daughter 34 weeks gestation SVD admitted from labour ward and in special care. Expected admission for weeks

m3 **unprepared**

seen on day 3, 39 year old woman in two bedded room, (other bed occupied with family visiting). Wearing nightclothes. First baby. No experience and no preparation and did not feel she would have wanted latter. Eye contact was difficult for her to maintain and turned away from me at some points during the session. Very concerned that she had done something or not done something that made his condition deteriorate. No father present and she declined his participation.
STAI = S= 70 T=34

b3 named son 40 weeks gestation SVD unexpectedly admitted from ward on day 1 requiring level 2 intensive care

m4 ***interviewed*** **unprepared**

seen on day 5, 32 year old woman in two bedded room, (other bed was unoccupied). Sat on her knees on the bed and seemed comfortable. Wearing nightclothes. She was a very small thin excited lady who seemed keen to chat. Fourth baby. Had no preparation or experience. No father was present and declined his participation.
STAI = S= 41 T=34

b4 named daughter 40 weeks gestation SVD unexpectedly admitted from labour ward requiring level 1 care for 2 days, then level 2 care
cared for by s1, 2 and 3

m5 **unprepared**

seen on day 3, 30 year old married woman in a two bedded room with the other woman sleeping during my visit. Chose to sit on her bed and seemed comfortable throughout the visit. Wearing nightclothes. She appeared relaxed talking to me and maintained appropriate eye contact throughout. She chatted easily about her named daughter and how much progress she had made since her birth. Expected transfer to ward that day. First baby born with the assistance of forceps. Had no preparation or experience. No father was present and declined his participation.
STAI = S=58 T=36

b5 named daughter 41 weeks gestation unexpectedly admitted from labour ward requiring level 2 care for first day then two days of special care before transfer to ward.

m6 **experience**

seen on day 2, 30 year old married woman in a single bedded room Sitting out of bed in a chair in nightclothes, watching daughter having just got her transferred to the ward after approximately 36 hours in NNU. Friends had babies born at 31 weeks, so she felt she knew about NNUs from them. No specific preparation. First baby born by emergency caesarean section under GA due to failed spinal. No father was present and declined his participation.
STAI = S=39 T=41

b6 named daughter 40 weeks gestation unexpectedly admitted from labour ward requiring level 2 then special care then transferred to ward on day 2

m7 ***interviewed*** **unprepared**

seen on day 4 and day 5. 32 year old married woman in nightclothes, sitting with her daughter in the NNU waiting for a doctor to come and discharge her to the ward. She was very keen to participate and chatted freely. Diabetic did not expect admission. No experience or preparation. Very tearful towards the end of the interview. This was her first baby and she was born by elective caesarean section. No father present and she declined his participation.
STAI = S=27 T=28

b7 named daughter 36 weeks gestation unexpectedly admitted from labour ward requiring level 2 care for 2 days, special care for 1 and then transferred to the ward

cared for by s4 and 5

m8 **unprepared**

seen on day 4, 34 year old married woman returning from visiting her daughter to her two bedded ward with no other occupant. She sat in a chair by her bed and appeared relaxed. Wearing nightclothes. She indicated that she would be delighted to help with the study as she was so grateful to the staff for taking care of her and her baby, so anything she could do to help would be fine. As a diabetic she had expected her baby to be admitted to the NNU although doctors had not given this indication. First baby born by emergency caesarean section. She had no experience and nor preparation for NNU. She declined her husband's participation
STAI = S=24 T=33

b8 named daughter 36 weeks gestation admitted from labour ward requiring level 1 care for one day, level 2 care for 3 days and then special care

m9 and f9 * **unprepared**

seen on 4, 27 year old married woman and 25 year old man in four bedded, balcony room. They arranged the chairs for themselves and me. Woman was dressed in her own casual clothes. First baby. They had no experience or preparation for NNU.

Mother **STAI = S=33 T=30**
Father **STAI = S=24 T=33**

b9 named daughter 40 weeks gestation SVD admitted from ward on day 1 requiring level 2 care for 2 days, special care for 1.5 and then transferred to the ward

m10 **unprepared**

seen on day 3, 30 year old married woman resting in bed in nightclothes in a two bedded room. Emergency caesarean section for this her first baby. No experience or preparation. Father did not acknowledge my presence nor spoke when his wife introduced me, so did not participate.

STAI = S=34 T=43

b10 named son 40 weeks gestation unexpected admission from labour ward requiring level 2 care for 3 days then special care

m11 and f11 * **unprepared (father visited NNU)**

seen on day 3, 22 year old quite animated and bright woman in nightclothes and 21 year old man with rather a flat affect sitting with their baby in the NNU in a corner of the unit. They were in double accommodation in hospital. First baby. Father held baby until mother had completed data collection tools, then they swapped. Neither had experience and mother had no preparation, although father had seen NNU. Given information about NNU prior to transfer. Both appeared very calm

mother **STAI = S=43 T=25**
father **STAI = S=51 T=28**

b11 named son 40 weeks gestation SVD unexpectedly admitted to SCU from ward then transferred to NNU for specialist care. Required level 1 care for 2 days, then level 2 and special care for one day each and then transferred to the ward

m12 **unprepared**

seen on day 4, 37 year old woman sitting in her arm chair in nightclothes in her single room holding her daughter having just bathed and changed her. As a diabetic with two previous babies born by caesarean section, she had expected this baby to be admitted to NNU although she had no experience or preparation. Caesarean section for previous caesarean sections. She declined her husband's participation

STAI = S=26 T=33

b12 named daughter 36 weeks gestation admitted from labour ward requiring 3 days special care, transferred to ward for one day and then discharged home.

m13 **experience**

seen on day 4, 30 year old co-habiting woman relaxing on her bed in nightclothes after her breakfast in a single room with her daughter in a wooden swing crib by the side of her bed. She was her second child and she was so pleased to have her in her room with her. There was no preparation but a family member had a baby in NNU, which she felt gave her some experience. She declined her husband's participation
STAI = S=20 T=33

b13 named daughter 40 weeks gestation, assisted breech delivery, unexpectedly admitted from labour ward requiring level 2 care and special care each for one day, then transferred to the ward for two days before being discharged home.

m14 **unprepared**

seen on day 3, 32 year old married woman resting in 4 bedded ward just finishing her breakfast looking rested and alert, dressed in her own casual clothes (tracksuit), sitting on her bed cross-legged. She had three other children and had not expected these babies to be admitted to NNU until she went into spontaneous labour at 31 weeks. She had no preparation or experience of NNU. She declined her husband's participation
STAI = S=24 T=25

b14 I named son 31 weeks gestation SVD and admitted directly from labour ward requiring level 1 care

b14 II named daughter born vaginally but breech and admitted directly from labour ward requiring level 1 care for a day, level 2 for 2 days and then special care

m15 **experience**

seen on day 4, 33 year old married woman who woke when I went into the four bedded room where she was alone. She felt she had not really slept since her baby's birth but was alert and very talkative although she did become muddled in some of her conversation. She sat up, made herself comfortable, cross-legged, and then proceeded to peel a satsuma, saying she just felt like one. Dressed in nighclothes. She chatted and questioned some of the items on the trait STAI, indicating that she was having difficulty choosing a category of answer. She agreed with herself to answer them as if she was having a good day usually, acknowledging that they were the usual. This was her first baby. A family member had a baby in an NNU 10 years previously and she felt this gave her some experience. She had no preparation. She declined her husband's participation
STAI = S=39 T=25

b15 unnamed daughter 40 weeks gestation SVD admitted from labour ward requiring level 1 care for a day, then level 2 care

m16 and f16 **information and personal experience**

mother seen on day 2, 31 year old married woman in a single room in the post natal ward preparing to visit with her baby. She requested that I leave forms for her 37 year old husband to complete, which he did. She was bathed, dressed in nightclothes, hair washed, make up on and moved easily. She had three other children from four pregnancies. The second child was in the same NNU. The parents did not expect this baby to be admitted but their previous experience had been helpful to them. They had information from the midwife and the NNU booklet.

Mother STAI = S=48 T=28
Father STAI = S=50 T=37

b16 named son 38 weeks gestation born by caesarean section and then admitted from the ward requiring level 2 care

m17 and f17 * **unprepared**

seen on day 4 of life but day 2 of admission. 34 year old woman and her 30 year old husband. These parents were visiting in the NNU and preferred to participate there. She was extremely pale and very tired, not really having slept since his birth and was still in nightclothes. As both had some "nursing/medical knowledge", they had been very worried about all the major conditions that their son, a second baby, could have and had taken several days to work down to the simpler conditions. They were frustrated about their lack of control. They had no experience and were unprepared.

Mother STAI = S=59 T=37
Father STAI = S=34 T=31

b17 named son 40 weeks gestation SVD and 2 days in the ward. Deteriorated and admitted to NNU requiring level 2 and special care each for one day then transferred back to the ward.

m18 **personal experience**

seen on day 4, 22 year old married extremely euphoric woman who jumped up from the dining table to get her gift pack from the delivery lady who had just preceded me into the ward. Once she got all her freebies, one of the midwives introduced me and this woman welcomed me into the balcony area where her bed was. She organised that we sit at the table and she offered me a coffee - hers had just been brought to her. She seemed to be on first name terms with everyone in the ward area and appeared very much at home. She was dressed in her own clothes. She was very open and made comment on several of the items in the STAI. She had three previous pregnancies, with one baby in NNU, one with no complications and another ending in abortion. She "knew" there was something wrong with this pregnancy. With her past experience of NNU and with her own knowledge about NNU's from TV and reading materials, she seemed fairly knowledgeable. She seemed very bubbly and talkative. She declined her husband's participation.

STAI = S=26 T=33

b18 named daughter 30 weeks gestation born by emergency caesarean section requiring level 1 care for 2 days than level 2 care

m19 **information**

seen on day 4, 34 year old cohabiting woman just completed her shower, dressed in her own clothes and had some make up on. She said that it was the first time she had felt clean and refreshed in days. However she also indicated that she was feeling as if she had the flu and that antibiotics may be required. This was her first pregnancy and pregnancy complication had resulted in an elective caesarean section at 30 weeks gestation. She had no experience but had been given information from the midwife and had been shown the unit. Had not seen her son for 2 days and was concerned that she was not doing what she should be for him. She said she felt well enough to complete the forms and indicated that her partner would be glad to do the same. Forms were left for him but were not returned.
STAI = S=62 T=41

b19 unnamed son 30 weeks gestation admitted from labour ward requiring level 1 care

m20 and f20 **experience and information**

seen on day 5, 35 year old married woman in a single room and had just returned from visiting in the nursery and phoning her mother to give an update. Due to the emergency caesarean section she was moving with some difficulty. She lay on her bed in nightclothes, was very pale and said she wasn't feeling too well. This was her first baby and her pregnancy had been complicated. She had been expecting to give birth prematurely and that the baby would be admitted to NNU. She had a friend who had very preterm babies in NNU and she had also been given information from several sources and visited the NNU with her husband. She felt prepared, as did her husband who participated by post.
Mother STAI S=54 T=20
Father STAI S=47 T=29

b20 named daughter 27 weeks gestation admitted from labour ward requiring level 1 care throughout

m21 **information**

seen on day 5, 24 year old cohabiting woman who was visiting with her other daughter. She had been discharged home 2 days before. She looked very pale but said she was glad to be at home getting some rest despite the children. She also had another son. Both these children had been preterm, 36 and 35 weeks. They had not required care in the NNU but she really felt during her pregnancy that this baby would be small, preterm and need to go to the NNU. She had no actual experience of NNUs but her mother who had NNU connections had given her lots of information.

Because of her past history, the midwife had also given her information about preterm babies and what some of the problems could be. She declined her partner's participation.
STAI S=28 T=30

b21 named son 34 weeks gestation SVD admitted from labour ward requiring special care throughout

m22 and f22 **unprepared**

seen on day 5, 31 year old woman, in her own clothes and was waiting for her discharge examination, and her 33 year old cohabiting partner. She was still recovering from her emergency caesarean section with her first baby and moved with some difficulty. She was resting in bed in a four bedded area. They had no experience or preparation for their baby's admission. Father participated by post.
Mother STAI S=57 T=34
Father STAI S=34 T=38

b22 named daughter. 34 weeks gestation admitted from labour ward requiring special care

m23 **unprepared**

seen on day 4, 41 year old woman lying on her bed in nightclothes alone in a two bedded room. Despite only wanting to complete the forms and not speak to me, she talked for approximately 2 hours unprompted. This was her first baby and she was unprepared for his admission and the emergency caesarean section. She declined her husband's participation.
STAI S=57 T=40

b23 named son. 36 weeks gestation admitted from labour ward requiring level 2 care for one day then special care

m24 and f24 * **unprepared (father with information)**

seen on day 3, 33 year old woman lying on her bed in a four-bedded room with only one other bed occupied. As she was finishing completion of one data collection tool, her 39 year old husband arrived and he readily agreed to participate. They had no experience and the mother had not been given any information. The father had read about NNUs in the media. This was their first baby
Mother STAI S=55 T=34
Father STAI S=25 T=25

b24 named son 32 weeks gestation SVD admitted from labour ward requiring level 1 care for three days, then level 2 care

m25 and f25 **possible experience (mother) but definite information**

seen on day 3, 35 year old married very small woman dressed in night clothes sitting on her bed with her 29 year old husband and a sister in law eating a special meal as part of a religious festival. This was a two-bedded room. The other bed belonged to another mother with a baby in NNU. The family knew the baby would be admitted to the NNU and had been given information. The mother indicated she also had experience of NNU although she could not explain this in conversation. Third baby from 6 pregnancies. Father left as mother completed the forms. He participated by post.

Mother STAI S=52 T=46
Father STAI S=48 T=46

b25 named son 25 weeks gestation SVD admitted from labour ward requiring level 1 care throughout

m26 **unprepared**

seen on day 3, 39 year old tall, well-built married woman sitting holding her baby waiting to go home. She was dressed in her own clothes. She seemed quite comfortable in the unit with all her possessions around her. She was unprepared for NNU although knew they existed from the media. She expressed concern that she was packed and ready but he was getting sleepier and sleepier and more jaundiced. (baby was not discharged that day) First baby. Declined her husband's participation.
STAI S=29 T=45

b26 unnamed son 39 weeks gestation SVD admitted from postnatal ward on day 1 requiring level 2 care and special care each for 2 days and then discharged home.

m27 **unprepared**

seen on day 3, 21 year old cohabiting woman sitting with her baby in a two-bedded room. The woman in the other bed had participated in the study, so this woman wanted to also. She was a very quietly spoken woman who avoided much eye contact but seemed open and willing to participate. She moved easily despite her emergency caesarean section pain. She had no preparation. She declined her partner's participation.
STAI S=46 T=34

b27 named son 34 weeks gestation admitted from labour ward requiring level 2 care on first day then special care.

m28 and f28 * **unprepared**

seen on day 4, 30 year old married woman and her 24 year old husband in the seating area for parents in NNU. She was very tearful but wanted to participate. They sat together on the couch and her husband had his arm round her for most of the time. Emergency caesarean section. They had no preparation and both expressed that they were very worried about their son, thinking he might not recover. First baby.

Mother STAI S=74 T=37
Father STAI S=66 T=52

b28 named son 40 weeks gestation admitted from labour ward requiring level 2 care for a day then level 1 care

m29 **unprepared**

seen on day 4, 31 year old woman, visiting from home, sitting at the end of the incubator where she was comfortable to participate. Acknowledged she was very worried initially but was less so no that he no longer required ventilation. She had no preparation. First baby. She declined her husband's participation.

STAI S=67 T=27

b29 named son 27 weeks gestation SVD admitted from district general hospital unit requiring level 1 care for 4 days then level 2.

m30 **unprepared**

seen on day 5, 26 year old married woman sitting in NNU wearing her own clothes. She seemed to take a long time to read the consent form and said that she had bad eyesight. She wore no glasses but did seem to be squinting to focus on the writing. She refused the offer of help, preferring to persevere herself. No preparation. Second baby. She declined her husband's participation.

STAI S=42 T=24

b30 named daughter 38 weeks gestation SVD admitted from labour ward requiring level 2 care for one day then special care

m31 and f31 * **unprepared**

seen on day 4, parents sitting in ward with their son just transferred from the NNU. A two- bedded room but the other family had just left with their visitors. The cot was placed between the parents who seemed very nervous but interested in participation. They kept looking over to their son who was sound asleep in his cot throughout. The mother was dressed in white night-clothes which made her look very pale and tired. They became increasingly agitated and did not complete anything but the consent form. Staff in NNU indicated they had both visited but had been extremely nervous and uptight. No preparation. First baby born by failed ventouse then forceps.

STAI not completed

b31 named son 40 weeks gestation unexpectedly admitted from labour ward requiring level 2care for one day, special care for 2 days then transferred to the ward.

m32 **unprepared**

seen on day 2, 36 year old woman in a 3-bedded room but the only occupant. She had just finished her tea and was pleased to have me stay at that time. She wore shorts and a baggy golf sweatshirt. She was bright and alert and seemed almost euphoric and bouncy. This was her first baby and she had no preparation. She declined husband's participation.
STAI S=36 T=28

b32 named son 33 weeks gestation, SVD, admitted via district general hospital unit requiring level 1 care

m33 and f33 * **experience**

seen on day 3, 28 year old woman and 29 year old husband were in a single room on the post natal ward. She was in her own clothes and was moving easily despite having had an emergency caesarean section. She stayed sitting on her bed and her husband sat in a chair next her. This was the sixth pregnancy but only their third baby. There had been one uncomplicated birth and one resulted in a NNU admission, giving the parents experience. They had been given no information during this pregnancy although both had felt that there would be problems. However even with this expectation, the emergency caesarean section was a surprise. Their past experience meant they did not feel as anxious as before but they were still concerned.
Mother STAI S=39 T=37
Father STAI S=43 T=26

b33 named daughter 34 weeks gestation admitted from labour ward requiring special care
cared for by s6 and 7

m34 and f34 **unprepared**

seen on day 5, 32 year old married woman relaxing on her bed writing her thank you letters. She was waiting for her husband to visit. She wore her night clothes and seemed relaxed and comfortable. This was their second baby and they had no preparation for NNU. The father was not present but participated by post.

Mother STAI S=26 T=26
Father STAI S=28 T=32

b34 named son 41 weeks gestation born by caesarean section and admitted via postnatal ward on first day requiring level 2 care then special care.
cared for by staff who did not participate

m35 and f35 * **unprepared**

seen on day 5, 27 year old woman and her 36 year old husband in a three-bedded room with the TV on and her packing some of her clothes away for him to take home. No other occupants. She was dressed in her own skirt and top and looked very cool and organised. He had been visiting for about 15 minutes and had settled down, slouching in an armchair, eating crisps, drinking cola which she had poured for him, reading the sports pages and watching whatever world cup football game was on the TV. Both had agreed to participate. While she seemed pleased to give me her attention, he did not and so between him completing the forms and answering direct questions, he continued to eat, drink, read and watch TV. The twins were their first babies and they had had no preparation.

Mother STAI S=61 T=30
Father STAI S=34 T=43

b35 I named daughter 30 weeks gestation SVD admitted from labour ward requiring level 1 care for one day then level 2 care
cared for by s8, 9 and 10

b35 II named daughter 30 weeks gestation born with forceps admitted from labour ward requiring level 1 care for one day then level 2 care
cared for by s11, 12 and 13

m36 **unprepared**

seen on day 4, 34 year old woman who gave the appearance of just coming out of the hairdressers - dressed in cool, stylish clothes, her hair was beautifully styled, make-up well done, looking very relaxed and comfortable sitting on a low soft chair, feet up and cuddling her second twin in the NNU. She had just returned from visiting the first twin who had been transferred for possible surgery. These were her first babies and she was unprepared for NNU. She declined husband's participation.
STAI S=41 T=31

b36 I named daughter 31 weeks gestation SVD admitted from labour ward requiring level 2 care and transfer for possible surgery on day 3.
cared for by s14 and 15, although s15 had no contact with the parents

b36 II named daughter 31 weeks gestation SVD admitted from labour ward requiring level 2 care for 2 days then special care.
cared for by s16,17,13 and 19

m37 and f37 *mother interviewed* **information**

seen on day 3, 16 year old single woman in a single room on the antenatal ward. She looked older than 16 years but appeared rather nervous. She was in her dressing gown and made herself comfortable on her bed. She appeared a fairly mature 16 year old, could hold a conversation, express her feelings and ask questions relatively easily. However I also got the impression that she had no idea what her responsibilities were going to be in bringing up a child. There seemed to be only vague plans for what would happen when she was discharged from hospital. This was her first baby. No experience but were shown NNU and given information. .
Her partner participated by post.
Mother STAI S=62 T=49
Father STAI S=47 T=37

b37 named daughter. 29 weeks gestation SVD admitted from labour ward requiring level 1 care.
cared for by s20 and 14

m38 **personal experience**

seen on day 2, 30 year old married woman in her nightclothes in a three- bedded room but by herself. She had been in the main post natal ward but had been upset by the other babies being with their mothers and so had asked for a transfer.
Her previous child had required surgery and she indicated this had given her preparation of NNU. She had been given no other preparation. She declined her husband's participation.
STAI S=55 T=38

b38 named son 37 weeks gestation ventouse delivery admitted from labour ward requiring level 1 care for one day then level 2 care.
cared for by s15 and 23

m39 and f39 **experience and information**

seen on day 4, 30 year old married woman in a single room in the antenatal ward in her nightclothes. Had very complicated pregnancy ending in an emergency caesarean section. She and her husband had seen the NNU and been given information during her antenatal admission. She was very tearful when discussing the speed with which events had occurred around the birth. Her husband participated by post.

Mother STAI S=50 T=48
Father STAI S=45 T=31

b39 named son 35 weeks gestation admitted from labour ward requiring level 1 care.
cared for by s24, 25 and 16

m40 *interviewed* **personal experience and information**

seen on day 4, 34 year old married woman sitting on her bed dressed in pyjamas reading a magazine and appearing quite comfortable. She had a previous baby in NNU and had also been given information via a hospital leaflet during this pregnancy. Declined her husband's participation.
STAI S = 40 T = 25

b40 named daughter 40 weeks gestation ventouse delivery admitted unexpectedly from labour ward requiring level 2 care for three days and then special care
cared for by s27

m41 and f41 * **information (mother)**

seen on day 2, 37 year old woman in a single room and had her husband and son for company, waiting for lunch to arrive. She was sitting on her bed, while her 38 year old husband was in a chair beside the bed reading the newspaper and watching TV and their son was sitting on the floor drawing pictures for his new brother. She appeared pale yet had her make up on; she was still in her night-clothes. She checked with her husband that it was OK for her to participate, to which he answered yes, and he agreed to do so also. Neither had experience but she had been given information.

Mother STAI S = 49 T = 28
Father STAI S = 55 T = 30

b41 named son 28 weeks gestation vaginal breech birth admitted from labour ward requiring level 1 care
cared for by s10 and s29

m42 and f42 personal experience and information (mother)

seen on day 3, 37 year old woman 2 days after an emergency section looking as if she was in no pain and moving easily and freely on her bed. She seemed amazingly euphoric, quite bouncy and positive although not really unrealistic, and was "delighted to.." participate. She was in her night clothes but had obviously been up and about for most of the morning. Her two previous babies had been in NNU and she had also received information this pregnancy although her 37 year old husband had not. He participated by post.

Mother STAI S = 40 T = 38
Father STAI S = 33 T = 23

b42 named son 32 weeks gestation admitted from labour ward requiring level 2 care.
cared for by s30

m43 unprepared

seen on day 4, 40 year old married woman sat on her bed, dressed in her nightclothes and appearing relatively comfortable amidst cards, flowers and balloons.
There was no preparation. This was a second child for this woman. There were marital difficulties, so husband's participation was not suggested.
STAI S = 35 T = 43

b43 unnamed daughter 35 weeks gestation SVD admitted from labour ward requiring level 1 care for 2 days and level 2 care for 3 days.
cared for by s31 and 32

m44 unprepared

seen on day 5 of life but day 4 of admission. This 30 year old single woman was in a two-bedded room in nightclothes, just having had a shower. She sat on the bed and was pleased to participate now that her son had been transferred back to the ward that day. She indicated that she would have been too upset to participate if he had been in NNU. This was her first pregnancy. She had no preparation. There was no partner.
STAI S = 64 T = 36

b44 named son, twin to named sister who had not required admission. 37 weeks gestation emergency caesarean section requiring admission from postnatal ward on day 1 for level 2 care for one day, then special care for 3 days before transfer to ward
cared for by s33 and 34

m45 and f45 **personal experience**

seen on day 3, 37 year old married woman visiting in NNU and decided to participate sitting just outside the NNU in an empty seating area. Her previous child had been in NNU but they had been given no information during this pregnancy. Her 37 year old husband participated by post.

Mother STAI S = 39 T = 42
Father STAI S = 44 T = 42

b45 named son 37 weeks born by emergency caesarean section and admitted from labour ward requiring special care.
cared for by s35 but no assessment made

m46 **unprepared**

seen on day 5 of life and 3 of admission. This 16 year old single woman was dressed in nightclothes and appeared to have just washed her hair sitting by her bed with her son back in the ward beside her. She was visibly pleased. This was her first baby and she had no preparation for his admission. There was no partner.

STAI S = 32 T = 40

b46 named son 41 weeks gestation born by caesarean section admitted at 2 days of age from postnatal ward requiring level 2 for a day and then special care
cared for by staff who did not participate.

m47 and f47 * **unprepared**

seen on day 7 of life and 4 of admission. This 26 year old cohabiting woman was in her single room on the postnatal ward dressed in her own clothes. She was complaining about the poor food. Her 29 year old partner visited and participated. This was their first baby and neither was prepared for the admission.

Mother STAI S = 49 T = 51
Father STAI S = 36 T = 35

b47 named son 39 weeks gestation born with forceps admitted from postnatal ward on day 3 of life requiring special care for 3 days and then transferred back to the ward.
cared for by s36 and 37

m48 **unprepared**

seen on day 2, 22 year old single woman sitting in a corner bed in the 4-bedded area of a postnatal ward. She was in her nightclothes. This was her first baby. There was no preparation. There was no partner.

STAI S = 35 T = 34

b48 named daughter 41 weeks gestation SVD admitted from labour ward requiring level 2 care for 2 days and then special care
cared for by s27 and 38

m49 and f49 **unprepared**

seen on day 5, 26 year old cohabiting woman a single room on the prenatal ward. This was her second baby and she said she was unprepared although the neonatologist had given her information about what would happen after the birth. Her partner participated by post.

Mother STAI S = 64 T = 48
Father STAI S = 48 T = 43

b49 named daughter 25 weeks gestation born by emergency caesarean section admitted from labour ward requiring level 1 care
cared for by s34 and 41

m50 and f50 **experience**

seen on day 3, 27 year old cohabiting woman in a single room in her own clothes looking relaxed and comfortable. Neither she nor her 30 year old partner had had any information about NNU but she had minimal experience of NNU. This was their first baby. Father participated by post.

Mother STAI S = 40 T = 39
Father STAI S = 40 T = 38

b50 named daughter 28 weeks gestation SVD admitted from labour ward requiring level 1 care for 3 days then level 2 care
cared for by s42, 43, 44

m51 **personal experience and information**

seen on day 5, a petite 26 year old cohabiting woman in the post natal ward, three bedded room dressed in night clothes. She sat on her bed surrounded by flowers and balloons. Her previous child was in NNU and she had been given information during this pregnancy also. She declined her partner's participation.

STAI S = 23 T = 24

b51 named daughter 35 weeks gestation SVD admitted from labour ward requiring special care
cared for by s25 and 45

m52 **unprepared**

seen on day 3 of life and 2 of admission. This 34 year old married woman was visiting her baby in NNU and appeared relaxed. She wore nightclothes. This was her first baby and she had no preparation for NNU. She declined her husband's participation.

STAI S = 36 T = 33

b52 named daughter 40 weeks gestation SVD admitted from postnatal ward requiring special care
cared for by s16 and 47

m53 and f53 **unprepared**

seen on day 4, 23 year old married woman in a two bedded room on the post natal ward. She was dressed in night clothes and sitting on her bed. This was her first baby and both had been unprepared for his admission. Her 28 year old husband participated by post.

Mother STAI S = 28 T = 30
Father STAI S = 38 T = 43

b53 named son 36 weeks gestation forceps delivery admitted from labour ward requiring level 2 care for one day then special care
cared for by s36 and 50

m54 and f54 * **unprepared**

seen on day 4, 35 year old married woman and her 38 year old husband visiting with their son in NNU. He was their first baby. Neither had been prepared for his admission.

Mother STAI S = 31 T = 30
Father STAI S = 21 T = 28

b54 named son 39 weeks gestation SVD admitted from labour ward requiring level 2 care for a day then special care
cared for by s25, 29, 35 and 36

m55 **personal experience**

seen on day 4, 34 year old married woman in a four bedded room with 2 other women. She had a corner bed and one of the other women had a baby in the NNU. This was her third pregnancy and she had experience of one previous baby in NNU. She had no information with this pregnancy. She declined her husband's participation.

STAI S = 31 T = 32

b55 unnamed son 37 weeks gestation elective caesarean section admitted from the postnatal ward on first day requiring level 2 care for a day then special care for 3 days before returning to the ward.
cared for by staff who did not participate

m56 unprepared

seen on day 5, 31 year old woman in a twin bedded room but with no other women. She was dressed in her own clothes and seemed to be getting her possessions in order, like doing housework. She had been given basic information at her first antenatal visit. She had no preparation. She had no partner.
STAI S = 50 T = 64

b56 I named daughter 24 weeks gestation SVD admitted from labour ward requiring level 1 care
cared for by s11 and 55

b56 II named son 24 weeks gestation SVD admitted from labour ward requiring level 1 care
cared for by s44, 57, 58 and 59

m57 and f57 personal experience and information (father)

seen on day 3, 30 year old cohabiting woman in a single room following an emergency caesarean section. She was moving very well and did not feel in as much pain as the day before. She was in her nightclothes. This was her 5th pregnancy with only 2 live children previously. They had both been in NNU and so the parents had experience. Her 32 year old partner had also had information from his family during this pregnancy. He participated by post.
Mother STAI S = 47 T = 55
Father STAI S = 43 T = 35

b57 named son 30 weeks gestation admitted from labour ward requiring level 1 care
cared for by s61

m58 experience and information

seen on day 5, 16 year old single, rather pale, frail looking teenager in a single room in the antenatal ward. This was her first pregnancy but she had experience of NNU with her sibling and had been given information prenatally. There was no partner.
STAI S = 57 T = 38

b58 I named son 27 weeks gestation born by caesarean section and admitted from labour ward requiring level 1 care
cared for by s19 and 62

b58 II named son 27 weeks gestation born by caesarean section and admitted from labour ward requiring level 1 care
cared for by s34 and 44

m59 **unprepared**

seen on day 2, 34 year old married woman lying in bed in a 3 bedded room with one other woman. She was in her night-clothes but looked fresh and had used make-up. She had no preparation for NNU. She declined participation for her husband.
STAI S = 48 T = 28

b59 I unnamed son 34 weeks gestation SVD admitted from labour ward requiring level 1 care for 2 days then special care
cared for by s44

b59 II unnamed son 34 weeks gestation SVD admitted from labour ward requiring level 1 care for 2 days then special care
cared for by staff who did not participate

m60 **unprepared**

seen on day 2, 41 year old divorced woman in a four bedded room resting on her bed in her nightclothes. She was a small, very thin, gaunt, pale, rather old looking woman with piercing eyes. This was her eighth pregnancy and eighth child. She had no preparation for NNU. There was no partner.
STAI S = 27 T = 42

b60 unnamed son 34 weeks gestation SVD admitted from labour ward requiring special care
cared for by s9 and 37

m61 and f61 **unprepared**

seen on day 2 This 21 year old cohabiting woman was in a two bedded room and had just returned from the shower. She was having more pain today than the day before and was finding it difficult to move around. She got perched on her bed and was comfortable. Neither she nor her 25 year old partner were prepared for NNU. Father participated by post.
Mother STAI S = 49 T = 39
Father STAI S = 53 T = 27

b61 named son 39 weeks gestation born by caesarean section admitted from postnatal ward requiring level 2 care for two days and then special care
cared for by s68

m62 **experience and information**

seen on day 2, 26 year old single woman in a single room in the prenatal ward and in her night-clothes. This was her second baby. She had experience of NNU with a friend's baby but had also been given information in this pregnancy. She declined the father's participation.
STAI S = 52 T = 37

b62 named daughter 25 weeks gestation SVD admitted from labour ward requiring level 1 care
cared for by s41

m63 **information**

seen late on day 1, 19 year old single woman in bed in a single room on the prenatal ward. These were her first babies. She had been given information about NNU. The father declined to participate.
STAI S = 43 T = 34

b63 I unnamed daughter 28 weeks born by caesarean section admitted from labour ward requiring level 1 care
cared for by s42 and 61

b63 II unnamed daughter 28 weeks born by caesarean section admitted from labour ward requiring level 1 care
cared for by s16, 74 and 75

m64 and f64 * **information**

seen on day 4, 35 year old married woman sitting on her bed in her night clothes in a single room. She looked tired and pale. Her 37 year old husband visited and participated. They had no experience but had been given information about NNU. These were their first babies.
Mother STAI S = 55 T = 41
Father STAI S = 73 T = 23

b64 I named daughter 28 weeks gestation SVD admitted from labour ward requiring level 1 care for 3 days then level 2 care
cared for by s76 and 77

b64 II named son 28 weeks gestation SVD admitted from labour ward requiring level 1 care for 4 days then level 2 care
cared for by s8, 34, 41 and 78

m65 **information**

seen on day 2, 28 year old married woman in a 3 bedded room. The other beds were empty. She was dressed in night-clothes and was looking very tired. The TV was on and she wanted to have it left on so she could watch the "soap". In fact she rarely looked at the screen and the volume was down very low. She had been given information but had no experience. Declined husband's participation.
STAI S = 46 T = 40

b65 named son 28 weeks gestation SVD admitted form labour ward requiring level 1 care
cared for by s13 and 83

Appendix 20

Summary of parents' data where incongruity of the quantitative and qualitative measures of parents' anxiety was identified

Key to abbreviations and terms

Most of the data were from mothers. When data were available from the father, these were indicated throughout. When the father's data are included in any row, the assessment in the column for "Situational factors, verbal and non-verbal behaviour, and assessments by staff if available, and by researcher of parents' anxiety", usually represents a joint assessment

Participant number and preparedness are based on mothers' data, but fathers' data are included as available.

Preparedness	up	= unprepared for the baby's admission to NNU
	info	= information about NNU care was received
	exp	= experience of NNU with others' babies
	pexp	= personal experience of NNU with previous baby
STAI scores	S = state score	
	T = trait score	

Difference in anxiety levels

More anxious	= state score is more than 10 points above trait score
Less anxious	= state score is more than 10 points below trait score
No difference	= the difference between state and trait scores is 10 points or less in either direction

NB The table is based on incongruity of data. If one partner's data were congruent, this is also identified.

Participant number and prepared-ness	STAI scores	Change in anxiety levels	Situational factors, verbal and non-verbal behaviour, and assessments by staff if available, and by researcher of parents' anxiety (mother only or **=includes father)
4 up	S=41 T=34	No change	In bed, appeared comfortable, excited and keen to chat. Very shocked about baby's admission and still very concerned about her condition Staff indicated parents were anxious and apprehensive initially, not wishing to disturb her, then when condition improved were keen and needed no encouragement to participate
5 up	S=58 T=36	More anxious	On bed, appeared comfortable and relaxed, chatted easily Had been very concerned initially but happier now baby was being transferred to ward
14 up	S=24 T=25	No change	Sitting cross-legged on bed in own clothes, appeared rested and alert, overwhelmed by NNU initially and would have been happier if the equipment had not been there. Distressed about going home without them Pleased that husband would be able to stay at home to help care for 5 children
20 info exp	Mother S=54 T=20 Father S=47 T=29	Both more anxious (father's congruence not assessed)	In pain and not feeling well, in bed. Expected baby to go to NNU. Felt prepared and supported. Very optimistic for daughter
22 up	Mother S=57 T=34 Father S=34 T=38	Mother more anxious Father no change (mother congruent)	** Mother in bed in own clothes, in pain. Waiting to be discharged home. Both initially shocked by admission, delayed visiting frequently until baby was out of intensive care. Still not confident

Participant number and prepared-ness	STAI scores	Change in anxiety levels	Situational factors, verbal and non-verbal behaviour, and assessments by staff if available, and by researcher of parents' anxiety (mother only or **=includes father)
24 up (father with info)	Mother S=55 T=34 Father S=25 T=25	Mother more anxious Father no change (mother congruent)	** Mother in bed, upset that no paediatrician had visited as promised. Felt lonely when son was taken to NNU. Neither liked to see son in pain. Focused on equipment
25 possible exp info	Mother S=52 T=46 Father S=48 T=46	No change (father's congruence not assessed)	In bed, feasting as part of religious festival. Felt numb and could not take everything in. Difficult to find a suitable time to visit baby Appeared in a state of shock re her son but conversely able to celebrate
26 up	S=29 T=45	Less anxious	In chair in NNU, in own clothes waiting for discharge, with all her possessions packed and ready, very concerned that baby was becoming sleepier and might not get home
27 up	S=46 T=34	More anxious	Sitting with her baby in ward. Quietly spoken, little eye contact. Open and willing to participate. Initially frightened but now pleased that he was not as sick as other babies nor her
33 exp	Mother S=39 T=37 Father S=43 T=26	Mother no change Father more anxious (mother congruent)	** Mother on bed in own clothes, father sitting by bed, both felt during pregnancy there would be problems. They felt fear, surprise, impatience and concern but not as anxious as previously. Settled back into NNU routine. Staff felt parents were keen to participate in care after initial reluctance due to equipment. Felt previous experience reduced anxiety

Participant number and prepared-ness	STAI scores	Change in anxiety levels	Situational factors, verbal and non-verbal behaviour, and assessments by staff if available, and by researcher of parents' anxiety (mother only or **=includes father)
35 up (father had NNU visit)	Mother S=61 T=30 Father S=34 T=43	Mother more anxious Father no change (mother congruent)	** Mother in ward, in own clothes, looking cool and organised. Packing possessions to go home. Father with flat affect, slouching in chair, drinking, eating and watching TV with apparent disinterest in what his wife and the researcher were doing. Father felt NNU visit helped keep him in control. Mother upset, frustrated and took time to feel love for babies. Overwhelmed with responsibility Staff felt parents were keen to participate. Father appeared to be more anxious than mother, fearful of holding and more visibly upset
39 info exp	Mother S=50 T=48 Father S=45 T=31	Mother no change Father more anxious (father's congruence not assessed)	Tearful and very upset when recalling speed of events around the birth, could not believe she had had a baby. Baby belonged to the nurses Assessment by staff was contradictory but encouragement was needed for visiting and interaction
40 info pexp	S=40 T=25	More anxious	Sitting on bed, appeared comfortable, concerned but not as anxious as with previous baby Able to assert herself more in NNU to get what she wanted Staff felt she needed no encouragement to participate and that previous experience was helpful

Participant number and prepared-ness	STAI scores	Change in anxiety levels	Situational factors, verbal and non-verbal behaviour, and assessments by staff if available, and by researcher of parents' anxiety (mother only or **=includes father)
41 mother with info	Mother S=49 T=28 Father S=55 T=30	Both more anxious	** Mother on bed, pale but with make up on, father in chair and other son playing between parents. Checked with husband to ensure she could participate. Felt she was agreeing with her husband's interpretation of events and his feelings. He was pleased baby was in NNU and with his progress. She was tearful and appeared more worried than her husband. Staff felt parents needed encouragement to participate but felt they were prepared and seemed calm
47 up	Mother S=49 T=51 Father S=36 T=35	No change (father congruent)	** Mother in own clothes in room, very surprised that NNU admission from ward was required. Neither liked NNU, felt awkward and disinclined to participate in care. Father surprised by admission but not upset by NNU and continued to care for him as on the ward. Staff varied in assessment of preparedness but parents were upset and needed encouragement to participate
48 up	S=35 T=34	No change	In bed, readily agreed to participate, very surprised about admission to NNU, could not understand why she was in NNU despite the explanations, felt in the way in NNU and kept her visits short although she longed to be with her. More cheerful today because baby might be transferred to a cot Staff felt the mother was apprehensive and needed some encouragement to participate
50 exp	Mother S=40 T=39 Father S=40 T=38	Both no change (father's congruence not assessed)	In own clothes in room, looked relaxed. Most upset and disappointed initially but pleased with her progress. Frustrated that she had not held her and did not feel like a mother. Seeing NNU in the past had helped Staff assessed both as being relaxed and enjoying contact with her, needing only a little encouragement (meeting with parents later, non-verbal behaviour indicated relaxation but verbal interaction indicated worry)

Participant number and prepared-ness	STAI scores	Change in anxiety levels	Situational factors, verbal and non-verbal behaviour, and assessments by staff if available, and by researcher of parents' anxiety (mother only or **=includes father)
54 up	Mother S=31 T=30 Father S=21 T=28	No change (father congruent)	** Visiting in NNU, both scared and very concerned about admission. Father had lonely first visit to NNU, unconcerned with equipment, appeared more relaxed than mother. Mother desperate to visit, more concerned with equipment than father. Very disappointed and did not feel she was a real mum because son was not in a cot beside her Staff felt both were nervous and anxious initially then relaxed and needed little encouragement to participate
56 up	S=50 T=64	Less anxious	Getting possessions together like housework. Very concerned about babies, shocked initially, did not like equipment. Missed doing the usual care giving but expressing milk was beneficial. Staff assessed her as initially very shocked with only brief visits with babies. More relaxed now. Needed some encouragement to participate. Unsupported socially.
65 info	S=46 T=40	No change	In bed, very tired, very anxious about admission. Longed to hold him and frustrated that he was too ill to allow this. Missed having her husband around at this very worrying time Staff felt she was fairly well prepared although nervous. She had good interaction during her short visits

Appendix 21

Summary of relevant biographical data related to NNU staff (listed according to the babies of participating parents for whom they cared)

To maintain confidentiality and anonymity, the staff member's length of experience in the NNU has been categorised as follows:

- very experienced = 10-15 years
- experienced = 5-9 years
- limited experienced = 1-4 years
- inexperienced = less than 1 year

(a) indicates longer neonatal experience but in another unit
(b) indicates participation in focus group

Cared for b4

s1 (b) very experienced senior midwife trained in neonatal care
s2 limited experience midwife/nurse with no neonatal training
s3 experienced midwife trained in neonatal care

Cared for b7

s4 (a) inexperienced midwife/nurse with neonatal training
s5 limited experience midwife/nurse with no neonatal training

Cared for b33

s6 limited experience nurse trained in neonatal care
s7 inexperienced midwife/nurse with no neonatal training

Cared for b35 I

s8 (b)limited experience midwife with neonatal training
s9 limited experience nurse with neonatal training
s10 experienced nurse with neonatal training

Cared for b35 II

s11 limited experience nurse with neonatal training
s12 (a) inexperienced midwife with neonatal training
s13 very experienced nurse with neonatal training

Cared for b36 I

s14 limited experience nurse with neonatal training
s15 limited experience midwife with neonatal training

Cared for b36 II

s16 limited experience midwife with neonatal training
s17 limited experience nurse with neonatal training
s13 very experienced nurse with neonatal training
s19 experienced midwife with neonatal training

Cared for b37

s20 (b)limited experience nurse with neonatal training
s14 limited experience nurse with neonatal training

Cared for b38

s15 limited experience midwife with neonatal training
s23 inexperienced nurse with no neonatal training

Cared for b39

s24 (b)limited experience nurse with neonatal training
s25 limited experience nurse with no neonatal training
s16 limited experience midwife with neonatal training

Cared for b40

s27 inexperienced midwife/nurse with no neonatal training

Cared for b41

s10 experienced nurse with neonatal training
s29 (a)(b)limited experience midwife/nurse with neonatal training

Cared for b 42

s30 (a)inexperienced nurse with neonatal training

Cared for b43

s31 (b)experienced nurse with neonatal training
s32 limited experience midwife/nurse with neonatal training

Cared for b44

s33 experienced midwife with neonatal training
s34 very experienced midwife with neonatal training

Cared for b45

s35 inexperienced nurse with no neonatal training

no participants for b46

Cared for b47

s36 inexperienced nurse with no neonatal training
s37 (a) (b) inexperienced sister with neonatal training

Cared for b48

s38 limited experience nurse with no neonatal training
s27 inexperienced midwife/nurse with no neonatal training

Cared for b49

s34 very experienced midwife with neonatal training
s41 limited experience nurse with neonatal training

Cared for b50

s42 (b)experienced nurse with neonatal training
s43 inexperienced nurse with no neonatal training
s44 experienced midwife with neonatal training

Cared for b51

s45 inexperienced nurse/midwife with no neonatal training
s25 limited experience nurse with no neonatal training

Cared for b52

s47 inexperienced nurse with no neonatal training
s16 limited experience midwife with neonatal training

Cared for b53

s36 inexperienced nurse with no neonatal training
s50 inexperienced nurse with no neonatal training

Cared for b54

s25 limited experience nurse with no neonatal training
s29 (a)(b)limited experience midwife/nurse with neonatal training
s33 experienced midwife with neonatal training
s36 inexperienced nurse with no neonatal training

no participants for b55

Cared for b56 I

s11 limited experience nurse with neonatal training
s55 experienced midwife with neonatal training

Cared for b56 II

s44 experienced midwife with neonatal training
s57 very experienced midwife with neonatal training
s58 (b)experienced midwife with neonatal training
s59 very experienced midwife with neonatal training

Cared for b57

s61 (b)very experienced nurse with neonatal training

Cared for b58 I

s19 experienced midwife with neonatal training
s62 (a) (b)experienced midwife with neonatal training

Cared for b58 II

s34 very experienced midwife with neonatal training
s44 experienced midwife with neonatal training

Cared for b59 I

s44 experienced midwife with neonatal training

no participants for b59 II

Cared for b60

s9 limited experience nurse with neonatal training
s37 (a)(b)inexperienced sister with neonatal training

Cared for b61

s68 (b)experienced nurse with neonatal training

Cared for b62

s41 limited experience nurse with neonatal training

Cared for b63 I

s42 (b)experienced nurse with neonatal training
s61 very experienced nurse with neonatal training

Cared for b63 II

s19 experienced midwife with neonatal training
s74 inexperienced nurse with neonatal training
s75 (a)experienced midwife with neonatal training

Cared for b64 I

s76 (a)(b)inexperienced nurse with neonatal training
s77 inexperienced nurse with neonatal training

Cared for b64 II

s8 limited experience midwife with neonatal training
s34 very experienced midwife with neonatal training
s41 limited experience nurse with neonatal training
s78 inexperienced nurse with neonatal training

Cared for b65

s13 very experienced nurse with neonatal training
s83 limited experience nurse with neonatal training